Croonian Lectures
ON
ADDISON'S DISEASE.

Delivered before the Royal College of Physicians,

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LECTURE II.—PART I.

MR. PRESIDENT AND GENTLEMEN,—I said in my first lecture that Addison's discovery has not yet been generally accepted, nor even generally understood. The connexion of the constitutional symptoms and bronzing of skin with the disease in the supra-renal capsules is still regarded, by many, rather as a matter *sub judice* than as a certain and definite relation. This scepticism is, no doubt, partly due to the fact that the relation between the disease in the supra-renal capsules and the clinical symptoms associated with it is much less susceptible of obvious explanation than the relation between the organic lesion and the clinical symptoms in many other diseases. To this part of the question I shall refer in my next lecture; but, in the meanwhile, it is evident that the obscurity of the relation can be no bar to the recognition of its reality, if this latter be substantiated by a sufficient number of well-attested facts. The general acceptance of Addison's discovery has, however, been mainly retarded by the prevalence of misconceptions which have prevented its being generally understood. I propose therefore to review, in the first place, the evidence proving the reality of the relation, and, subsequently, to deal with the misconceptions which have interfered with its general recognition.

If it were only that so obscure a disease, as one particular lesion in the supra-renal capsules, has been often correctly and publicly diagnosed from the symptoms supposed to be connected with it, it seems difficult to understand that the connexion should not be universally allowed to have passed out of the region of theory into that of established truth. I have myself, on twelve occasions, diagnosed Addison's disease of the supra-renal capsules, in the presence of medical students and friends, and in eight of these cases the correctness of the diagnosis has been verified at the autopsy. Two of the twelve patients died at a distance from London, and the remaining two are still living. There have now, indeed, been so large a number of cases similarly diagnosed that it is impossible to enumerate them, and the evidence which they afford of the reality of the connexion between the clinical symptoms and the pathological condition would, alone, seem to me unanswerable. It is still argued, however, in some quarters, both at home and abroad, that, although a diseased condition of the supra-renal capsules may frequently coincide with certain clinical symptoms, it is by no means essential to their development, and, consequently, cannot be their cause. I shall therefore proceed to show that the whole weight of the evidence, furnished by the large number of cases published since Addison's time, as bearing upon the subject of the disease he discovered, goes to prove that the coincidence of the clinical symptoms of Addison's disease with one particular lesion of the supra-renal capsules is the almost invariable rule, the exceptions to which, if duly investigated, may be satisfactorily explained. I shall also be able to show that this particular lesion is essential to the development of those symptoms, in so far that medical records have, as yet, produced no single case exhibiting the really characteristic features of Addison's disease in which this particular lesion of the supra-renal capsules was not also present.

For many years past I have, from time to time, collected all the cases I could find in the Transactions of medical societies, or in the British or foreign medical journals, published under the name of Addison's disease, bronzed-skin disease, disease of the supra-renal capsules with or without bronzing, and bronzing of skin without disease of the supra-renal capsules. I cannot suppose, however, that none have escaped me, for I have not had access to all the medical works in which cases may have been recorded, and latterly my leisure for such researches has been less than in former years. This collection amounts now altogether to 330 cases, in all of which there is a more or less complete report of the morbid appearances found after death; for I have disregarded, as useless for my present purpose, all those cases which have not undergone the test of post-mortem examination. Of these 330 cases a very considerable number fall into three classes, which must be set aside till the later part of this lecture. One of these classes includes all the cases in which no disease at all was found in the supra-renal capsules; the second, all those cases in which the disease found in the supra-renal capsules was of an altogether different nature from the particular lesion characteristic of Addison's disease; whilst in the third class are comprised all those cases in which the description of the condition of the supra-renal capsules leaves doubtful the nature of the lesion, and even, in some instances, the existence of any lesion at all. After deducting the cases which fall into these three classes from the total number collected, there remain 228 cases, in all of which the supra-renal capsules are reported to have undergone the one particular morbid change which I have described.

As regards the reality of the relation between this particular lesion of the supra-renal capsules and the clinical symptoms supposed to be associated with it, I take first, because most indisputable, the evidence furnished by 101 of these cases, which may be classed in one group as typical cases of Addison's disease: typical, as corresponding in all their main facts with the outline of Addison's own description; more or less typical according as the length of their course or the opportunities of observation have enabled their reporters to present, more or less in detail, the remarkable features which fill in that outline.

In all these 101 cases, the train of constitutional symptoms and the peculiar change of colour in the skin were observed, during life, in a more or less fully developed form. In all the 101 cases the supra-renal capsules were found, after death, to be diseased; and the disease was in every case of the same nature, corresponding with one or other of the stages of the particular lesion which I have described; and, lastly, in none of the 101 cases did any other organic lesion exist which could be of the slightest importance. There can surely be no reasonable doubt that in every one of these cases the disease in the supra-renal capsules was, either immediately, or mediately through its consequences, the sole cause of death.

But although, with a view to adducing first the most unanswerable argument to be derived from the facts collected, I have placed in a group by themselves these 101 cases, which I have called typical, there is another large class of cases which, in reality, affords scarcely less convincing proof of the connexion between the clinical symptoms and the supra-renal disease. In 51 more cases, both the constitutional symptoms and the discolouration of skin were observed, during life, in a more or less typical form; but either the other organs were not examined, so as to place beyond question the absence of any coexisting disease, or else some complicating disease actually existed, giving rise to symptoms of its own, independently of those characteristic of the supra-renal lesion. A very large proportion of these cases, however, are, in fact, as typical examples of the disease as any of those I have placed in the previous group. Again, in 31 other cases, some of the characteristic constitutional symptoms are reported, together with some discolouration of the skin; but in some of these cases the descriptions are too meagre to justify me in placing them either in the first or in the second group; whilst in others there were coexisting diseases, serious enough to modify or obscure some of the usual symptoms of the supra-renal disease.

We have thus altogether, out of the 228 cases in which the one particular lesion of the supra-renal capsules has been found, no less than 183 cases in which a peculiar change of colour in the skin, and some, at least, of the characteristic constitutional symptoms, were observed during life.

In 16 of the remaining 45 cases the clinical history and symptoms are either altogether wanting, or are too imper-

fectly recorded to warrant any conclusions being founded upon them. Amongst this number are included several cases which occurred before the announcement of Addison's discovery.

These 16 cases being necessarily left out of the question, there remain only 29 of the 228 cases still to be accounted for; and in these 29 cases it is distinctly stated either that no bronzing of the skin existed or that it was almost inappreciable. In 18 of these 29 cases the disease in the supra-renal capsules coexisted mostly with advanced vertebral disease and phthisis, or with general tuberculosis, but in two or three cases, with Bright's disease or ascites. In some of them the coexisting disease was acute tuberculosis, which always runs a very rapid course; and in most of the others the coexisting diseases were attended by a considerable and exhausting drain, such as profuse suppuration from abscesses in vertebral disease, or from the lungs in rapid phthisis, or loss of albumen from the blood in Bright's disease. Three of these cases have occurred in the Middlesex Hospital, and I was present at the post-mortem examination of one of them, and verified the absence of all trace of discolouration of the skin; but the patient, a boy aged thirteen, who died under Mr. Shaw's care, had been rapidly worn down by profuse discharge of pus from an abscess connected with carious vertebræ. A few of these cases have, however, presented some of the peculiar constitutional symptoms due to the supra-renal lesion, in addition to those of the more obvious disease, though not in a sufficiently marked form to give rise to any suspicion of their real cause, until it was discovered at the autopsy. Thus in the second of the three Middlesex Hospital cases to which I have referred, Dr. Thompson recorded in his case-book that the patient, a man aged forty, who died after an illness of only six weeks with extreme disorganisation of the lungs, had, before he took the cold which brought on his rapidly fatal illness, been suffering from "languor, failure of appetite, and vomiting after food." The third case, which was one of vertebral disease and incipient phthisis, was under the care of Mr. Hulke, who stated in his notes that the patient suffered from "a degree of feebleness quite out of proportion to the loss of flesh, a very irritable stomach, and obstinate constipation." In this last case it was obvious that the supra-renal lesion was in a comparatively early stage when the patient died, for the inflammatory exudation, with which the right capsule was infiltrated, had not yet undergone the process of caseous degeneration, and the left capsule appeared to be still healthy. The inference which I draw from the absence of bronzing of skin, and most frequently also of the constitutional symptoms, in these 18 cases, is, that in most of them the diseases coexisting with the disease in the supra-renal capsules proved fatal before this latter had produced any of its characteristic effects; whilst, in a few of them, the end was probably hastened by the specific debility and depression which are usually the first symptoms of the supra-renal disease, but which in such circumstances would naturally pass unnoticed. As we have seen, Dr. Thompson's and Mr. Hulke's patients did both present such symptoms, distinct from those of the more acute diseases which caused their deaths—a fact which seems to confirm the inference I have drawn with respect to these 18 cases.

The explanation of the other 11 cases, in which it is stated that there was no bronzing of skin, is at first sight less obvious. In none of these was there any coexisting disease of importance, and some of them are amongst the most typical on record as regards the constitutional symptoms. Nearly all of them, however, have been cases in which the illness has been of comparatively short duration, only two having exceeded a course of four months; and in several there must have been, notwithstanding the absence of any developed bronzing, some peculiarity in the colour of the skin sufficient to attract attention, as "slight duskiness," "skin unnaturally dark," "peculiar sallow hue," are noted together with the absence of bronzing. In one case, indeed, very fully reported by Hertz in Virchow's *Archiv* for 1870, there was no trace of discolouration of skin, even at death; but the illness would seem to have been of short duration, for, although the patient reported himself to have been failing in health since an attack of cold and quartan fever a few months previously, he only presented himself at the hospital six days before death. At that time, moreover, he had still some appetite, and the description of his condition is not that of an advanced stage of the disease, but he sank suddenly under the unusual severity of the nervous symptoms. In another case, under the care of Dr. Owen Rees, reported by Dr. Wilks, which was most characteristic as regards the constitutional symptoms, and in which the patient was failing in health for a year, and ill for nine weeks, there was no discolouration whatever. The same may be said of a few other cases, including cases recorded by Dr. Bristowe and Mr. Crossman, of four and eight months' duration respectively. This last case is the longest on record in which death has taken place with all the characteristic constitutional symptoms of Addison's disease, but without any sign of change of colour in the skin. There is, nevertheless, one such case included in the eleven, in which the illness is stated by Mr. Bruce, who reported the case for Dr. Russell Reynolds, to have lasted sixteen months. But, as the patient had been always delicate and a hard drinker, and as the only symptoms observed were sickness, loss of flesh, and sense of emptiness at the epigastrium, it may have been difficult to fix the commencement of the illness due to the disease in the supra-renal capsules. It is certain that this latter was not in an advanced stage at the time of the patient's sudden death, for a little of the proper tissue of the organs was still found remaining.

The simple and satisfactory explanation of all these cases lies, I believe, in the variable comparative date of development of the constitutional symptoms and bronzing of skin in different cases, to which I drew attention, in my first lecture, as one of the peculiar features in the course of this remarkable disease. It was at first thought that the absence of bronzing of skin, in otherwise obviously characteristic cases of Addison's disease, might be accounted for on the supposition that a course of several months at least was requisite for the development of the bronzing. More extended clinical observation has now established the fact, that, in a certain number of cases, the bronzing of skin is more or less fully developed for considerable periods of time before the patient feels any symptoms of illness; whilst, on the other hand, in a considerable number of cases, the constitutional symptoms have shown themselves for longer or shorter periods before the appearance of any discolouration of skin.

It is evident, however, that cases belonging to the former of these classes are much less liable to give rise to misunderstanding than cases of the latter class; for, whilst those patients who are affected first by the discolouration of skin will live on as usual till the constitutional symptoms make their appearance, those patients in whom the constitutional symptoms are first developed may very possibly die, especially if exposed to the effects of any external depressing influences, before the appearance of the discolouration of skin. This is, in fact, precisely what I believe to have occurred in all the eleven cases which I am now discussing. I believe them all to have been typical cases of Addison's disease, whose course was cut short by individual feebleness, or by unfavourable circumstances, before the development of the bronzing of skin, which would have presently taken place, as in the cases quoted in my previous lecture, if their course had been sufficiently prolonged.

Looking to all the difficulties which have stood in the way of our obtaining full and accurate reports of even the recognised cases of this rare and obscure disease, and to the certainty that many of the cases have remained unrecognised till after death, when it was too late to fill up deficiencies in the clinical records, I cannot but regard these statistics as furnishing conclusive evidence of the constant relation of a certain train of constitutional symptoms, together with a peculiar change of colour in the skin, to one particular diseased condition of the supra-renal capsules.

Such a weight of concurrent testimony to the truth of Addison's discovery could scarcely, indeed, have remained so long unrecognised, had it not been for the extensive prevalence of those misconceptions to which I have alluded, as obscuring the true aspect of the question from the moment it was first submitted to the profession.

These misconceptions had reference chiefly to the characters of the discolouration of skin and of the lesion in the supra-renal capsules which were really indicative of Addison's disease; and they originated, as we have seen, in a great degree, in Addison's own mistakes. He subjoined to his own typical cases others presenting discolouration of skin and disease in the supra-renal capsules of quite

different characters, and unassociated with any of the apparently causeless constitutional symptoms which had attracted his attention. He also gave to the disease the name of "melasma supra renale," for which was afterwards substituted that of "bronzed skin disease"; thus identifying the disease itself with its most conspicuous, but least important, feature. Thus the asthenia and other peculiar constitutional symptoms, which had first revealed to Addison the existence of the disease, were by degrees in a great measure overlooked, both in reports of cases and in discussions based upon them. Numerous cases were brought forward, on the one hand, only to show that discolouration of skin not unfrequently occurred without any disease whatsoever being found in the supra-renal capsules; and, on the other hand, merely to prove that discolouration of skin did not always result from disease in the supra-renal capsules, even when sufficiently extensive to cause the entire destruction of those organs. In both these classes of cases the facts were undeniable, and the inferences drawn from them have been alleged, from that day to this, as the principal arguments against the truth of Addison's discovery—namely, that

Discolouration of skin not unfrequently exists without any disease of the supra-renal capsules; and that

Disease of the supra-renal capsules not unfrequently exists without producing any discolouration of skin.

Both these allegations are undoubtedly true, but, as I shall proceed to explain, they neither of them contravene, in the slightest degree, the reality of the relation which subsists between the peculiar change of colour in the skin and the particular lesion of the supra-renal capsules which are found in Addison's disease.

First, then, discolouration of skin does frequently exist without any disease of the supra-renal capsules; but it is discolouration which either presents altogether different characters from that associated with supra-renal disease, or which, if more or less resembling it, is easily referable to some other obvious pathological cause, or to some known physiological condition. Neither Addison himself, nor anyone who upheld his views, has ever professed that disease of the supra-renal capsules was to be regarded as the only cause of discolouration of skin. This would have been as absurd as to assert that disease of the kidneys was the only cause of dropsy. In both cases the truth discovered was the relation between a hitherto undiagnosed local lesion and one particular form of an obvious affection.

There are various conditions, both physiological and pathological, which are accompanied by general or partial darkening of skin; but as the former are universally known and attributed to their true physiological causes, I need not dwell upon them, and therefore pass on to the various discolourations of skin produced by pathological causes, which have been more or less frequently confounded with the peculiar discolouration of Addison's disease. Among these there is, perhaps, none more striking than the cutaneous discolouration often seen in elderly persons of very indigent circumstances and uncleanly habits, especially when infested by vermin. I have records of several such cases, which have been under my care in the Middlesex Hospital, either for obvious disease, or simply for the debility and sinking consequent upon long-continued hardships and exposure. In the year 1864 I exhibited one of these cases at the Pathological Society as "a case of bronzed skin, simulating the discolouration of Addison's disease." Such cases, however, though undoubtedly presenting some of the appearances of Addison's disease, may yet be easily distinguished from it. In my patient, a woman aged sixty-five, the skin was extensively bronzed, especially over the abdomen, chest, and back; but the discolouration, when carefully examined, was totally different from the bronzing of Addison's disease. It was seated in the superficial instead of in the deeper layers of the epidermis; it was paler, instead of deeper, on the face, hands, and other parts, which are naturally the seats of most pigment; and the small, isolated dark spots were all upon the pale, instead of on the discoloured, portions of the surface. The darkened cuticle, also, was not soft and smooth, but in many parts raised and rough. Lastly, such constitutional symptoms as were present, debility, languor, and a sense of sinking at the epigastrium, were obviously referable to apparent causes, and were soon removed by tonic treatment and an ample supply of food. I should add that, under the use of alkaline warm baths and soap, the discolouration greatly diminished, though the skin did not regain its normal hue.

Again, it is well known that pityriasis versicolor is attended by more or less extensive and permanent discolourations of skin, and cases of this kind have more than once been adduced in supposed disproof of the connexion between bronzing of skin and disease of the supra-renal capsules. The seat and distribution of these discolourations, however, as well as their modes of development and disappearance, are widely different from the characters of the peculiar change of colour in Addison's disease. The dark patches are usually more upon the trunk and limbs than on the face; they have abrupt margins and convex borders, and are interspersed with spaces of normal coloured skin; they appear and disappear rapidly; and, above all, no asthenia nor other constitutional symptoms are associated with them.

Syphilitic eruptions are also notoriously the cause of more or less permanent stains on the skin; but, although their coppery hue and spotty character distinguish them clearly from the bronzed skin of Addison's disease, they must be not unfrequently confounded with it, for it has happened to myself to have two such cases sent to me, in private practice, on the supposition that the discolouration indicated the existence of Addison's disease.

There are, however, various kinds of discolouration of skin which bear a somewhat more real resemblance to the bronzing of Addison's disease, in so far that the skin remains soft and smooth, and the pigment is deposited in the same layers of the epidermis, though not in the same quantity, nor usually to the same extent, nor in the same characteristic seats. Such discolourations are well known to be produced occasionally by diseases peculiar to women, by tropical and malarious fevers, by long-continued hepatic disease, and by very chronic phthisis. Of this last class of cases I have seen several remarkable examples since my attention has been directed to the subject. A woman, aged twenty-six, who died under my care in the Middlesex Hospital of chronic phthisis in 1871, presented, when I first saw her, precisely the appearances of Addison's disease in an early stage, her face having the same peculiar duskiness, and her forehead, except where covered by the hair, being of a distinct brown colour, though the skin remained perfectly soft and smooth. Another phthisical patient, a man aged fifty, was sent to me, in 1872, by my colleague Mr. Nunn, with an abnormal pigmentation of the tongue, almost exactly resembling that frequently seen in Addison's disease, and with patches of brown discolouration on the mucous membrane lining the inside of the lips and cheeks. My colleague Dr. Thompson also invited me to examine, some time ago, a man aged fifty-five, suffering from bronchitis and emphysema, with, it was suspected, old-standing phthisis behind the acute ailments. He exhibited several brown patches, corresponding with the extent of superficial injuries received in a fall about a year before; and on the lower part of the sternum there was a transverse irregular white cicatrix, about an inch and a half long by a quarter of an inch wide, which was encircled by a dark-brown ring, of nearly half an inch in width, fading off into the normal hue of the surrounding parts; the skin of the groins was also slightly dusky. In all these cases the partial discolourations strikingly resembled those found in corresponding situations in Addison's disease, but they neither deepened nor spread over the general surface during the subsequent illness of the patients, nor did these latter suffer from any constitutional symptoms except those of their pulmonary complaints. I need therefore scarcely say that in all three cases the supra-renal capsules proved to be perfectly healthy. The observation of these and of other similar cases has convinced me that no partial discolourations of skin are to be relied on as diagnostic of Addison's disease unless found in conjunction with the characteristic constitutional symptoms.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The next meeting will be held on Saturday, March 20th, at 7.30 P.M., when Dr. B. W. Richardson, F.R.S., will read a paper entitled "Some new Researches on the Cause of Increment of Animal Heat from the action of the Septinous Poisons, with a *résumé* and continuation of the author's researches on the Synthesis of Contagious Diseases, reported to the Society in the year 1865."

Lumleian Lectures

ON LIFE AND ON VITAL ACTION IN HEALTH AND DISEASE.

Delivered at the Royal College of Physicians,

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PHYSICIAN TO KING'S COLLEGE HOSPITAL.

LECTURE I.—PART I.

OBJECTIONS TO PHYSICAL DOCTRINES OF LIFE.

MR. PRESIDENT AND GENTLEMEN,—The nature of life is a question which has engaged the attention of the most thoughtful of every age, and was, perhaps, one of the first enigmas that philosophic men essayed to solve. For more than two thousand years the greatest among poets, philosophers, naturalists, divines, mathematicians, and, in later days, chemists, anatomists, physicists, surgeons, and physicians, have thought and speculated and investigated in the hope of finding out what life was. But physicists, as well as those who are opposed to their conclusions, are still obliged to speak of the *mystery of life*, and we may feel sure that this large question will engage the attention of philosophers yet to be, and will supply a theme for many an essay ere the problem will be finally solved.

Can there be one amongst us who, contemplating the marvellous phenomena of man's organism from the first dawn of life to birth, and through infancy and childhood to maturity, old age, and death, has not longed to know more about the exact nature of the changes he observes and the causes of them, than he can learn at this time? And surely he who has studied and pondered over the minute changes accompanying the development and growth of tissues, the phenomena occurring in the same structures in disease, and the not less marvellous fact of their cessation at death, must have witnessed, with sorrow and disappointment, attempts upon the part of some of the most popular of our scientific teachers to revert to doctrines almost identical with those held in the time of Lucretius, to stop speculation, save in one direction only, and to force the public to believe that all these wonderful changes are mechanical—to assure us, in short, that these and the phenomena of all worlds, beginning, duration, and end, are to be summed up in that grotesque formula, "from fiery cloud to fiery cloud." It would be more to the point if physical authority, instead of decreeing such final solution of the great problem of being, would, with the help of physics, give a more complete answer to the question "What am I?" than has yet been obtained, and clearly show that the *why*, the *how*, and the *whither*, need no longer puzzle the understanding.

The general conclusions we may feel inclined to accept will be much affected by the particular views to which we may lean concerning the nature of the changes occurring in matter that is alive, and it will be found that vital theories cannot be fully discussed without touching upon the most profound of our thoughts. It is not, therefore, surprising that, by the advocacy of rival doctrines, feelings should be aroused which are not favourable to the steady prosecution of scientific investigation, or compatible with calm deliberation and the discovery of truth. The discussion of such questions cannot be carried on, even in England, without warm controversy; and, occasionally, scientific ardour seems to sanction tactics which one would suppose had emanated from the code of the political propagandist rather than from that of the searcher after scientific truth.

With a tenacity of purpose worthy of a better cause, it has been affirmed again and again that physical and chemical processes *constitute* the life of the higher animals; and, at this time, there is a considerable party who believe and teach physical doctrines of life. Nevertheless, it can hardly be doubted that, of those who speak thus confidently, many are perfectly aware that there are certain phenomena which occur in everything living that cannot be explained by physics and chemistry. No explanation is offered of the particular phenomena in question, but, in direct contravention of the principles upon which science rests, it is asserted that all phenomena are physical; some investigators apparently preferring to strengthen a party manifesting a certain definite tendency in thought than to aim at scientific accuracy and work on in a spirit of scientific independence.

Free speculation and the framing of hypotheses stimulate and encourage inquiry, and ought not to be opposed, but scientific speculation must be controlled by observation and experiment. Even purely conjectural propositions which arise from time to time in the mind not unfrequently form the starting point of new lines of scientific inquiry. Nay, I believe that but for the mental pleasure derived from speculation and contemplation, it is doubtful whether original observers would be able to complete the tasks they set themselves to perform—tasks often lasting for months or years, and depending upon the steady prosecution of observation and experiment, in the course of which failure, disappointment, and the consciousness of lost time will be found to make a large item in the account. Scientific men must exercise their imagination, though at the same time they must control it. Observers probably differ from one another less as regards capacity for imagining than in the judgment they display in the publication of the results of imaginative inquiry. One man, perhaps, may examine carefully and then cast away hosts of ideas that another would gladly seize upon and bring under public notice at the earliest possible moment as thoughts that ought to move the world. Anyone having enthusiasm, who pursues a definite line of inquiry, will naturally desire to press on into the region just beyond the limits of observation and experiment; and this tendency is advantageous, for it often leads to new discovery. But of late scientific men, boasting of their exactness, have tried to drag us into very remote regions of conjecture, and insist that we shall accept, as literally true, all they discover in their imagination concerning the potentialities of imaginary atoms.

And not only so, but it has been more than suggested that some of the facts of the imagination upon which certain very old doctrines, recently revived, are based, cannot be made evident to people generally, but are only thoroughly understood by a very limited number of privileged persons. It is, therefore, a necessity that information so distributed should only be dispensable by a select few. But if we really study some of the hasty generalisations recently put forward, we shall find that after all they are little more than the opinions of one or two scientific speculators, having remarkable confidence in the infallible nature of their own opinions. Their unbounded faith has led many to accept their statements as literally true, and by degrees a powerful party has been formed. Now no reasonable objection ought to be made to a combination among those who agree in their views of nature for the purpose of spreading the truths they have discovered, and endeavouring to gain for them the greatest publicity. The more widely and the more quickly facts are spread after they have been proved to be true, the better for investigators and for students. But that a few scientific men who have committed themselves to a particular set of doctrines, or that any one scientific man should, upon matters of science, speak as it were *ex cathedrâ*, and declare a particular doctrine concerning the origin and formation of all things to be absolutely true, should praise in highly extravagant terms those who side with him, and stigmatise those who do not at once accept his views or who differ from him in opinion, as unworthy of credit, or as weak or foolish or savage, cannot be right or to the advantage of science. Such a course, if supported by many scientific men, and if sanctioned by public opinion, would surely be extremely prejudicial to liberty of thought and freedom of inquiry; for would it not soon lead to the establishment of a power that, instead of proposing, would decree, and, being convinced of its infallibility, would not hesitate to promulgate it? Nay, there is manifestly at this time a strong desire to establish a new power in connexion with science and philosophy which would be contrary to the first principles of English thought and destructive of progress.

I venture to think that enthusiastic disciples of physical life science have recently seized far too much of the world of life and assumed that it was their own, and have claimed privileges which do not and ought not to belong to investigators and teachers—especially the privilege of enjoying,

with only a very few other highly gifted persons, a monopoly of the work of extracting scientific truth from the depths of the imagination. If some of the hypotheses now very popular can only be understood by a very small number of scientific men, is it impossible that the facts and arguments advanced against them should be made intelligible to a very large number of intelligent persons?

Many of this College, following the noble example set by the most illustrious of their predecessors, have done their utmost to extend the boundaries of medical science, and among our number are not a few who have taken an active part in the purely scientific work of the present century. The scientific as well as the practical aspect of medicine has ever been well represented in the College lectures, but many circumstances seem to me to render it desirable that those among us who are favoured by circumstances and have a natural bent for scientific pursuits should do their utmost to maintain the high reputation for pure science won by their predecessors, and, as far as they have the power, hand down the honoured precepts to those who shall succeed. Such considerations, Sir, I hope may afford some justification for the course I shall take in directing attention to debated questions connected with life, which I fear may be deemed by some out of place here, in the theatre of the Royal College of Physicians. But I may also plead, that one who has long been a teacher of physiology, and has had the honour of receiving a Baly medal, may not unnaturally desire to ask this College and the profession to consider with him phenomena of the greatest interest, and which are most intimately connected with individual life in a state of health and disease. But, above all, I have been affected by the circumstance that at this time we are overwhelmed and confused with the most conflicting statements as regards even the simplest facts of life. We have no solid foundation upon which to build the fundamental principles of our science, for are we not, many times in each year, enjoined to accept as true the doctrines of a purely conjectural philosophy, based upon conjectural discoveries concerning matter and atomic phenomena?

To the doctrines now generally taught, and fast becoming very widely diffused, I am and have been strongly opposed. In certain particulars those doctrines are in conflict with views based upon well-observed facts, in relation to the growth and multiplication of every known form of living matter, and the formation of the tissues of living beings. Many observations, though repeated again and again, must be entirely erroneous if the positive statements recently made concerning the phenomena of living beings are true. It may be presumptuous, perhaps, to suggest that the conclusions arrived at by me many years ago ought not to have been wholly ignored by authorities who have expressed themselves in very confident language concerning the physical nature of life; but people have been informed again and again that *all* the phenomena of living beings are due to physical changes, although it has been pointed out that phenomena characteristic of every kind of living matter cannot be so explained. I have for many years pleaded in vain that, for example, an attempt should be made to explain the movements of an amœba or a mucus corpuscle by physico-chemical action. But, instead of being answered, I am twitted with belonging to an institution famous for its orthodoxy. Old assertions are again repeated, and it is dogmatically declared, in the plainest language, that *all living things are machines*, and *that all their actions are mechanical*.

It is therefore right, as it seems to me, now to proceed a step further, and challenge the supporters of the physical theory of life to publicly reply to the objections urged against the statements they have made. For has not the time arrived when the facts and arguments upon both sides might be summed up and judgment given, whether the physical doctrine of life is justified by the scientific knowledge of the time in which we live; or whether, on the other hand, it is not a thoroughly unscientific inference, based only upon the facts of the imagination, and opposed to facts of observation?

In the physical domain, as has been well said, consequence follows its antecedent with unerring certainty. What will happen under certain given circumstances can be stated with exactness and premised beforehand. But it is not so with the living world. It has yet to be proved that every change there is a direct consequence of antecedent physical change. We cannot predicate of vital as we can of physical phenomena. We have not the certainty of physical law. Nevertheless, with amazing confidence, not, however, resulting from knowledge, some declare that the difference is to be easily accounted for by the greater complexity of the circumstances and conditions which obtain, as regards vital phenomena. When, it is affirmed, by further investigation these circumstances shall have been fully investigated, man, we are assured, will be able to define, with absolute certainty and unerring precision, the particular living form which shall result from the development, under certain given conditions, of a particle of colourless transparent matter which represents the earliest stage of being of countless numbers of very different creatures. And yet changes, characteristic of every form of living matter, have been scarcely alluded to by the upholders of this notion. It must, indeed, have struck many as a remarkable fact that so little has lately been said concerning the relation of life to matter. The connexion between mind and body, mind and brain, mind and matter, has been very fully discussed; but the question of the connexion between life and body has received far less attention, although the determination of the last is the preliminary inquiry which would naturally be presented for solution, before the nature and relations of mind were touched upon.

Surely we who have been studying life in many forms and under varying conditions, who have from early age been familiar with the tissues and structural changes occurring in man and animals in health and disease, ought to carefully examine the current statements about the physics of life, and try to prevent the wider diffusion of mere mechanical views, at least until it shall have been proved that they rest upon some solid foundation. We have been assured, over and over again, that we must accept a particular doctrine or nothing; but surely the alternative is not a very terrible one, for is it not conceivable that some may prefer being stigmatised as believers in nothing to the privilege of accepting as literally true highly conjectural propositions?

Ought we not to urge those who have assumed the responsibility of teaching physical doctrines of life to publicly reveal the facts, and clearly state the arguments, upon which they rely for the establishment of the doctrines they assert to be true—doctrines which seem to be based upon mere discoveries of the imagination, though they are, it is to be regretted, believed and taught in the most ancient of our seats of learning, where, strange to say, Socratic philosophy and caution are still inculcated?

Among the doctrines referred to are the following:—

The sun forms living beings.

The brain and all organs have been built by the sun.

All the actions of all things living are mechanical.

All things living are machines.

Living organisms, as well as crystals, are the products of molecular forces.

The mind, the intellect, the will, thoughts, and emotions, as well as the body, were once latent in a fiery cloud.

The present world and all its inhabitants, past and present, as well as those to come, lay potentially in the matter which was once cosmic dust.

The lowest forms of living approximate very closely to non-living material.

Only matter and material forces—only atoms and atomic forces—have been and are concerned in the formation of all things, living as well as non-living.

Up to this time no one has succeeded in showing that the above propositions contain the vestige of a substratum of truth, and it would have been easy to have added several others to the above list, of which the same remark would be correct. Those who force such views upon public attention incur a serious responsibility, but I am not sure if scientific men who strongly disapprove of the course taken, and who know full well that many of the extravagant assertions now made in the name of science, and from a scientific platform, cannot be supported by facts, do not, by their silence, incur a responsibility equally grave, inasmuch as they permit arguments which they know to be unsound to be advanced in the name of science without objecting to them.

And now, Sir, I think I cannot better show how fully sensible I am of the high honour you have conferred upon me by appointing me to deliver these lectures to the College and the profession than by asking of you permission to

resign whatever authority the position of Lumleian lecturer may have given; for I would come before you as a student who, after studying and working for many years, desires, in as plain a way and as briefly as he can, to speak of some of the things he has seen, and is anxious to indicate, as far as he is able to do so, the broad general principles which seem to be deducible from his observations.

Much of what I have to tell is simple, and will easily be understood, and there is nothing that I have found out that might not have been found out by another had the same means of inquiry been adopted, and had the work been patiently carried on for as long a time. Far from laying claim to the possession of any unusual powers or privileges of investigation, I shall be quite content if I am credited with the power of being able to see as correctly as my contemporaries.

The preparations upon which my inferences are based have been shown to others, and not a few were exhibited in this theatre soon after they had been made. It is upon demonstration that I rely, and if I am not convinced that opponents who have never seen my specimens know much more about them than I do, who have carefully studied them for hours under very high magnifying powers, on many different occasions, I hope I shall not be considered a very unreasonable and prejudiced person.

In the course of six lectures which I delivered to the College in the spring of 1861, and which were published soon afterwards, and in the course of the same year, translated into German by my friend Prof. Victor Carus of Leipzig, I directed attention to the remarkable characters of *living matter*, and pointed out how this could be distinguished throughout nature.*

I also showed that in nutrition the pabulum always gained access to the living matter, and that by and out of this latter alone tissue was formed,—the very matter that was once living becoming converted into the tissue. Specimens of the living matter were exhibited, some of which were taken from the lowest organisms, and others from the tissues of the higher vegetables and animals, and from man. The varying proportion of living matter in corresponding tissues at different ages was also demonstrated in cuticle, cartilage, muscle, nerve, and other tissues. The living matter was called *germinal matter*, which term has been since replaced by the short and more convenient word *bioplasm*; and the matter formed from it was termed *formed material*, because it was shown that all tissue, "intercellular substance," and matters resulting from changes in the so-called cell were formed from the bioplasm only.

It was also shown that masses of bioplasm, after reaching a certain size, usually less than $\frac{1}{1000}$ of an inch in diameter, underwent division, and that as soon as any mass of bioplasm attained a certain definite size (which differs in different creatures and textures, but which is constant for the same), it divided, or portions moved away, and at length detached themselves from it. If the bioplasm were to continue to grow, the distance to be traversed by the nutrient matter, before the inmost parts were reached, would soon become so great that these would be practically beyond reach, and could not be nourished or subjected to the constant action of currents of fluid. Death would begin in the central part of such a mass, and would soon involve particle after particle as its ravages extended outwards, until the whole of the living mass was dead. There are many circumstances connected with the life of a mass of bioplasm which render its growth without division and subdivision a most improbable event. With the exception of that fanciful sheet of living matter once supposed to grow in the sea at very great depths—never seen, but received in undoubting faith by the critical Strauss—that so-called Bathybius which was evolved from the depths of the imagination at a time when a primeval physical basis of all life was particularly wanted by certain advocates of evolution,—with this exception, I repeat, large masses of living matter exist not.

In man and the higher animals it is the exception to find a single mass of bioplasm which measures as much as the $\frac{1}{1000}$ of an inch in any direction. It is not wonderful that particles of matter so small, especially as they are also colourless and structureless, should have been for a long time passed over as of little importance, and almost ignored by some anatomists. In many drawings of tissues which contain numerous masses of bioplasm, not one is represented, for it was supposed that the tissue was formed independently of such particles; but the evidence in favour of the view that it is from these small masses of living matter that all tissue grows is incontrovertible. Without them nothing characteristic of a living organism is formed. These, and not the formed tissues, are the seat of nutrition, formation, and differentiation, and in them is the sole source of metabolic power.

It was not to be expected that conclusions differing so widely from those entertained at the time by most observers, and so opposed to the general inferences concerning the nature of vital phenomena, would be accepted without the most thorough criticism. For that every conscientious worker ought to hope. I have been at all times ready to demonstrate the facts upon which my conclusions are based, and have been prepared to modify my views or abandon them if errors should be discovered and mistakes plainly pointed out. Every student of nature must be ready to have his conclusions at least considerably modified by those who follow him, and who go over the same ground with advantages necessarily greater than those which he, as a labourer in what was then a new field, could enjoy.

Nor can an observer, living in times when materialism happens to be in the ascendant, at least among scientific men, and who is so unfortunate in his observations as to light upon facts which seem to him to support a view of the nature of life not in accordance with the tendency of the thought of his day, expect that his researches will be very kindly received or considerately treated. All this must be accepted, but is it not very doubtful whether the energy displayed during the last few years in pressing ill-founded and extravagant generalisations upon public attention will be of advantage, either by exciting an increased desire for scientific information, or by raising science in the esteem of well-educated persons?

It is, indeed, difficult for an observer to decide upon the course he ought to take in these days to bring his observations under the notice of other persons interested in similar inquiries. No doubt a certain humility of demeanour towards some who, I venture to think, assume that they occupy a position not sanctioned by custom, nor to be defended as an innovation likely to promote the interests of science, might obtain for an observer the privilege of working without serious opposition, and perhaps without hostile notice. But I venture to think that although a scientific man ought not to take any active steps to force his views before his contemporaries, or to gain for them the greatest possible notoriety, he may fairly expect that his results should be considered and weighed under the same advantages as those enjoyed by other members of the scientific body. Of course he should be careful not to excite opposition, but it would be unreasonable to expect him to be always making efforts to conciliate possible and probable opponents, or to passively submit to be roughly silenced by a clique, because his views and opinions are opposed to unproved and unprovable dicta, promulgated by them.

In theory, at least as it seems to me, every worker appeals to, and ought to be protected by, scientific public opinion, which perhaps, hardly as yet existing in England, is slowly, but it is to be hoped surely, developing itself. An observer should endeavour to accurately describe what he has seen; and, having published the results of his inquiries, should announce, in the only way open to him, that such a work has been completed, and can be obtained by those who desire to see it. It will, however, save under very exceptional circumstances, hardly be possible for him to get attention directed to his observations without some sacrifice of independence to which no real worker will like to submit, although the only alternative may be to be ignored or condemned as one not fitted to survive in the struggle for intellectual existence.

BIOPLASM AND FORMED MATERIAL.

The simple living matter of a microscopic fungus, like other forms of bioplasm, is clear, colourless, and structureless, soft, and, when growing quickly, almost diffluent. It is enclosed in a capsule of equally colourless formed mate-

* As much misconception has arisen as to the exact date of my observations on account of frequent references on the part of authorities to observations of Max Schultze and Kühne, while mine were wholly ignored, it is only right to draw attention to the fact that Max Schultze's "Das Protoplasma" was published in 1863, nearly two years after my lectures appeared, while Kühne's "Untersuchungen über das Protoplasma" did not appear till 1864.

rial, which, however, is firm, and sometimes even hard. It varies in thickness under different circumstances. By pressure the capsule may be caused to rupture, and the bioplasm within may be squeezed out. When this simple organism is nourished, nutrient pabulum, dissolved in water, permeates the capsule of formed material and comes into contact with the bioplasm within. The non-living matter then undergoes changes most wonderful, in the course of which it acquires the same properties and powers as the bioplasm which already exists possesses. The thickening of the capsule of formed material is effected by the deposition of new formed material, resulting from changes in the bioplasm upon the inner surface of the formed material already existing.

If the fungus particle is placed under favourable circumstances it will *grow*. The particle which is growing not only increases in dimensions, but, as already mentioned, manifests a tendency to separate into two or more parts. Sometimes the living matter exhibits little projections or diverticula from its surface, each of which, after a time, becomes detached and constitutes a separate particle, which may grow and divide like its predecessors. Now the phenomena I have, in very few words, imperfectly sketched—the taking up of pabulum by the living matter, and its conversion into bioplasm,—the arrangement of the elements of the bioplasm prior to the formation of the formed material,—the moving away of portions of the bioplasm from the rest, as occurs in the production of the buds or offsets,—I hold to be *vital actions*, agreeing in all essential particulars with corresponding phenomena which occur in every known kind of living matter. These phenomena differ absolutely from any actions known to occur in any kind of non-living matter whatever. They cannot be imitated, and no actions known can be fairly said to exhibit any true analogy with them. These *vital phenomena* do not characterise the formed material, for the production of this corresponds to the death of the bioplasm. As the formed material is produced bioplasm ceases to live, and no kind of formed material can *grow* and transform matter and direct its forces as living matter is known to do.

ON

RECENT IMPROVEMENTS IN THE DETAILS OF ANTISEPTIC SURGERY.

BY JOSEPH LISTER, F.R.S.,

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH.

(*Continued from p. 367.*)

SOLUTION of carbolic acid in the fixed oils, which, as regards the tenacity with which they hold the acid, occupy an intermediate place between the watery solutions and the resinous mixture in the gauze, has been for the most part superseded by these latter; a watery solution being more efficient as well as more cleanly for a detergent lotion, while the resinous mixture is more mild and more persistent, and therefore better adapted for a permanent dressing. There are, however, some circumstances in which the oily solutions are valuable. For lubricating instruments introduced into the bladder, such as catheters, bougies, sounds, or lithotrites, I have for some time past used a solution of one part of carbolic acid in twenty parts of olive oil*—a proportion which, while unirritating to the urethra, is trustworthy as an antiseptic; and there can be no doubt that the avoidance of putrefactive fermentation within the bladder is in many cases a matter of vital importance. In using a catheter, the interior of which cannot be kept clean, but must have more or less of foreign material encrusted upon it, some of which might by chance enter the bladder from regurgitation, the instrument should either be kept for several minutes with the carbolic oil within it before it is passed, or, what is more efficient and saves time, it may be washed out with the 1 to 20 watery solution before being smeared with the oil. Washing urethral instruments with such a lotion will probably have the further important advantage of securing us against the conveyance of specific virus from one patient to another by their means. For a protracted experimental investigation into the subject of putrefaction and other fermentative changes having proved to me the perfect efficiency of the 1 to 20 watery solution of carbolic acid in destroying minute organisms of a fungoid or bacteric nature, I feel that we can hardly be wrong in assuming its destructive effect upon the viruses alluded to, which, though not proved to be organisms, analogy leads us to regard as in all probability of such a nature. If this be so, the use of such a lotion and lubricating oil for specula and other articles used in female complaints will prevent in the other sex the lamentable results which have now and then occurred from instrumental infection.

Cases from time to time arise in which it is desirable to have an antiseptic in constant active operation on the interior of a wound, necessitating the frequent renewal of the dressing; and for this purpose a solution of carbolic acid in about ten parts of olive oil answers well.* As an example of its use in this way, I may mention a practice which I have adopted of late years in caries limited to the middle or anterior part of the tarsus and accompanied by sinuses. Cutting right across the soft parts of the dorsum of the foot, including the tendons, vessels, and nerve, I open the tarsus completely from side to side at the diseased part, when, the foot being bent upon the sole as upon a hinge, the carious portions are exposed with perfect freedom for inspection and operation, and all bones or portions of bones that appear suspicious are removed, the procedure being rendered much more precise and satisfactory by the bloodless method of operating which I have for many years pursued—viz., emptying the limb of blood by raising the foot to the utmost for a few minutes, and then applying a tourniquet as rapidly as possible and so tightly as to prevent any circulation in it.† The vessels having been secured, it remains to dress the wound. If this were done in such a way as to permit unchecked putrefaction in it, there would be great risk of serious disturbance from the extension of putrefactive suppuration into the tarsal joints opened in the operation. On the other hand, as the sinuses communicating with the wound already contain putrescent materials, it would be useless to operate under the spray and apply an external gauze dressing. What is needed is something that shall prevent the putrefaction from spreading from the points where it may exist to the rest of the wound. This object is attained by first washing the cut surface with the solution of chloride of zinc, 40 grs. to 1 oz. of water—a practice of the utmost value in all cases where, in consequence of the presence of sinuses or the situation of the part, as the mouth or perineum, it is impossible to exclude causes of putrefaction from the wound. When sinuses are present, I formerly advised their injection with solution of the chloride by means of a syringe before the commencement of the operation. But though this is undoubtedly the most efficient mode of introducing the liquid into the recesses of the sinuses, I have found that the force with which the solution is driven in by the syringe may cause it to burst through the pyogenic membrane of the sinuses and become effused into the cellular tissue. This accident, in two instances (one of caries of the wrist and one of amputation through the condyles of the femur) led to extensive loss of vitality of the integument, and hence for the last three years I have contented myself with injecting the sinuses at the conclusion of the operation, when, the sinuses being freely open at the wound, the risk referred to no longer exists.

Chloride of zinc, I may remind the reader, has this remarkable peculiarity among all antiseptics that I have tried, that a single application of it to a recent wound in a solution of the strength above mentioned, though it produces no visible slough, yet prevents the occurrence of putrefaction in the cut surface for days together, in spite

* The practice of using carbolised oil for lubricating instruments introduced into the bladder was first suggested, so far as I am aware, by Professor Rolleston, in his address on Physiology delivered at the Oxford meeting of the British Medical Association. (See British Medical Journal, Aug. 15th, 1868.)

* Linseed oil is objectionable from the permanent staining it produces in linen. Boiled linseed oil is, indeed, far better than any other oil for mixing with whitening and carbolic acid to form the antiseptic paste or putty, which has long since been superseded by the gauze, but which on an emergency, in absence of the gauze, might still be used with advantage in some cases.

† Since Professor Esmarch has published his method, I have substituted an india-rubber tube for the tourniquet with advantage.

of the access of septic material;* and if the discharges have opportunity to flow freely away, as after the removal of a tumour of one of the jaws or a portion of the tongue, there may be absolutely no odour from first to last, the divided textures being thus guarded from the bad effects of putrefaction during the dangerous period before they have been covered by the protecting layer of granulations.

But in the wound of the foot which we are considering, if any permanent dressings were employed, the blood and serum effused in the early periods of the case, and accumulating more or less in the interior, would not be prevented from putrefying by the chloride on the cut surface. And it is only in rare cases that the injection of the sinuses with the chloride has the effect of eradicating all putrefaction from them. This is a thing to be aimed at, but hardly expected. In order, therefore, to avoid the extension of putrefaction from any septic point in the wound, the antiseptic dressing must be frequently changed; and this is conveniently done with pieces of lint dipped in the oily solution of carbolic acid (1 to 10), the oil preventing the lint from sticking in the wound, so that it can be readily removed. In order to admit of the free application of this dressing to all parts of the cut surface, the wound is made to gape freely by depressing the toes along with the foot-piece of the M'Intyre splint on which the limb rests. The oiled lint is renewed every three hours day and night during the first twenty-four hours, and after this the interval is gradually increased as discharge diminishes, till after three or four days one dressing per diem is sufficient. The free exposure of the wound has this further important advantage, that it permits the surgeon to examine the surface with the finger from time to time in order to ascertain when the bones are entirely covered with soft granulations; for then and not till then can he be sure that the bones are perfectly sound, and as soon as this is the case the foot-piece is adjusted at right angles with the leg, so as to permit the granulating surfaces to coalesce and the wound to heal. In all the five cases in which I have hitherto had occasion to employ this treatment, the immediate object was completely attained, the foot remaining quite free from inflammation, and the constitution without febrile disturbance. Two of the cases are still under treatment, not yet completely cicatrised. Of the other three feet operated on in this way, two are useful and strong, though more or less shortened. The other, after being a perfectly serviceable foot for several months, became the subject of relapse, requiring amputation at the ankle. The practice was suggested to me by the remarkably satisfactory results of antiseptic treatment in a case of wound by a circular saw which divided the soft parts completely at the instep, laying the ankle-joint freely open. The patient not only recovered with a freely movable ankle-joint, but, except a line of cicatrix across the instep, there was nothing abnormal in either the appearance or actions of the foot. And it is somewhat remarkable that, in the cases of disease, where the wound has been left gaping for weeks, not only has the power of extension of the toes been restored, but sensation has been recovered in the parts supplied by the divided nerve.

As another example of the usefulness of the oiled lint may be mentioned abscess beside the rectum, where the vicinity of the anus renders a permanent gauze dressing inapplicable. The skin having been washed with 1 to 20 watery solution of carbolic acid, the abscess is opened under the spray where it points, and a pad of lint soaked with 1 to 10 carbolic oil is applied and retained by a T bandage, and changed every five or six hours. Before defecation, the patient draws the bandage and pad towards the side where the wound is, so as to keep the latter covered while exposing the anal outlet, which is carefully cleansed with a piece of lint dipped in the antiseptic oil before the pad is readjusted. The oil, penetrating among the folds of the skin, is more efficient for this situation than the gauze would be, even were it frequently changed. After two or three days have passed, the strength of the oil may be reduced to 1 to 20, if the stronger proportion causes irritation. I have treated several cases in this way both in hospital and in private practice, and in every instance the occurrence of fistula has been avoided, although in some of them it was ascertained, by digital examination of the rectum before opening the abscess, that pus was present in the submucous tissue—a state of things which, I believe, inevitably leads to fistula if the abscess is treated in the ordinary way. Of course scrupulous care on the part of the patient is essential to success, but this I have not found wanting, even in hospital cases, when it is clearly explained that fistula will be prevented by the requisite pains.

It is an interesting fact, pathologically, that the progress has been equally satisfactory when the pus has been fetid on evacuation as when it was odourless, the discharge being a mere serous oozing after the escape of the original contents. This seems to imply that the cause of the fetor was not any organic (bacteric) ferment, but a peculiarity in the action of the part. For had septic organisms been present before the abscess was opened, they would have continued to propagate in it in spite of the antiseptic treatment; and the result would have been the same as under poultice or water dressing, or, what comes to the same thing, under an antiseptic dressing carelessly employed. For it is hardly needful to point out that neither the spray nor the carbolic oil applied externally, nor the oiled lint inserted in the outlet to serve as a drain, could correct putrefactive fermentation once established in the abscess cavity. Here, as in the antiseptic treatment generally, the means used are calculated to prevent, not to correct, putrefaction.

(To be continued.)

* For the introduction of this invaluable antiseptic into surgical practice the profession is indebted to Mr. Campbell De Morgan, of the Middlesex Hospital, London.

FORTY CASES OF NÆVI SUCCESSFULLY TREATED WITH ELECTROLYSIS.

BY S. J. KNOTT,

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I THINK I have related below a sufficient number of cases to show the value of the treatment I wish to advocate. I use Stöhrer's and Meyer and Meltzer's continuous batteries, and judge according to the size of the nævus how many cells to use—six or eight is about the average if the battery is in good working order. If the nævus is small I use one or two needles attached to the negative pole, and one to the positive, and pass them into the tumour; but if large, I put on several needles in the negative cord, and use charcoal point with the positive. After the needles have been in the tumour a short time decomposition begins to take place; this is shown by bubbles of gas passing by the side of the needles. A clot is then formed, the tumour turns of a bluish white, and in this clot fibrous degeneration takes place, and ultimate cure is the result. The advantages of the galvanism are its certainty of action, its safety, the faintness of the cicatrix, and the cessation of pain directly the operation is over. I have used every other method, and I certainly think this by far the best.

R. D——, aged four months. This child had a venous nævus on the end of the nose, which made the latter look blue and bulbous. Two needles were applied on the 4th of December, 1872. The child was not seen again till the 20th of the following April. It was then quite well.

A. S——, aged four months and a half, was brought to me on the 21st of March, 1873, with a capillary nævus on the inner side of the right labium magus, about the size of a split almond. Two needles applied. Discharged cured on April 26th.

E. T——, aged five months, was brought to me on the 21st of October, 1873, with a capillary nævus of the right eyebrow, about the size of a sixpence. Two needles used. Had a second application on 30th. Discharged cured on November 12th.

J. S——, aged six months, was brought on Dec. 21st, 1873. This child had four nævi, all of them capillary; one on the right side of the throat, measuring an inch and a quarter by one inch; one on the left cheek, which was an inch and a half in circumference, and had several small superficial vessels running into it; one on the chest, just above the xiphoid cartilage, and one on the back, both about the size of a shilling. This case took some time to cure, as I only treated one nævus at a time, the one on the cheek requiring

four applications, the tributary vessels making the matter complicated. She ultimately got quite well, and the tributary vessels, when the nævus was cured, gradually disappeared.

A. G——, aged fourteen months, was brought on January 13th, 1874, with a large nævus on the right side of the neck an inch and a half by one inch. Had had nitric acid applied by own doctor six or seven times. It presented a curious appearance, being white in places where the acid had burnt through the epidermis, the red surface of the nævus appearing in the other parts. The mother said it was spreading fast downwards. As it was a large one, I contented myself with applying the needles all round the margin, and two days after at the centre. It was operated on three times. Discharged cured on March 15th, 1874.

A. W——, aged five months, was brought on Jan. 19th, 1874. Had a capillary nævus on the right back, just below the scapula. It measured an inch by half an inch. Was operated on twice. Discharged cured on March 7th, 1874.

E. C——, aged five months, came on the 19th of January, 1874, with an arterial nævus on the forehead, about the size of a sixpenny-piece. Two needles were used. Discharged cured Feb. 7th, 1874.

K. H——, aged three months, came on February 16th, 1874. Had two nævi: one about the size of a split-pea, situated on the border of the left upper eyelid; and the other, about twice the size, on the upper lip. Two needles were used to these, and they were quite well in three weeks.

A. P——, aged seven years. This child came from Yorkshire, and was taken into the hospital on April 15th, 1874, suffering from a large venous nævus, which occupied the whole of the lower lip, and had extended over the alveolar process. The lip was much thickened, and looked blue; it hung away from the teeth, and the inner surface was turned outwards. There were three places, about the size of a threepenny-piece, where the nævus had penetrated to the surface. She was placed under the influence of chloroform, and five needles were passed into the lip from above downwards, and attached to the negative pole, the positive, with charcoal point, being applied in the neighbourhood. The operation was performed six times, in the same way, on an average of once in ten days. She left the hospital quite well, no sign remaining of either the disease or the treatment.

A. S——, aged two months, was brought to me on the 14th of May, 1874, with a capillary nævus on the lower eyelid, left side, about the size of a small pea. This was treated with two needles, only one application being required for its cure.

H. W. C——, aged eight months, was brought on the 13th of August, 1874, with a capillary nævus on the side of the nose, near inner canthus of eye, about the size of a split bean. This was rather difficult to get at with the needles, and so had to be done twice. Cured.

F. B——, aged eight weeks, was brought on Feb. 1st, 1875. This case was a peculiar one. There were five venous nævi on the right arm, two situated above and behind the elbow, two on the outer side of the forearm, and one large one situated at the bend of the elbow, and reaching from the middle of the joint in front to the olecranon, and in circumference about the size of a half-crown, the whole surface being in an ulcerated state. It had been under medical treatment, the mother said, for five weeks. The slightest touch would make it bleed. It was hard to the touch, especially around the base; could be moved away from the structures underneath. Two needles were used freely, and in two days after it took on a healthy aspect and began to heal, and on March 1st was quite well. I have commenced to treat the others.

L. P——, aged fourteen weeks, was brought to me on March 1st, 1875, with a very large capillary nævus. It is four inches by three and a half; it commences in the left supra-scapular region, covers over the whole extent of the clavicle, extends upwards to the root of the neck, and runs downwards nearly to the nipple. I passed five needles into the lower border attached to the negative pole, and applied the positive pole to the neighbouring parts (ten cells were used), and kept them there till a firm clot was formed. It will take four sittings to complete the operation. Is going on very satisfactorily at present.

Burwood-place, Hyde-park.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tam aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

MIDDLESEX HOSPITAL.

CASES OF COXITIS TREATED BY EXCISION.

(Under the care of Mr. HULKE.)

THE following is a continuation from p. 372, and terminates the series of cases commenced at page 268.

CASE 11. *Coxitis; excision; amputation at hip-joint; recovery.*—F. G. N——, aged nineteen, was admitted into Forbes ward on the 6th March, 1874, with coxitis of about twelve years' duration. He was a pale anæmic lad, with thick complexion and a dry branny skin. His left lower extremity was very wasted; the thigh was strongly flexed and adducted, and very firmly anchylosed to the pelvis. He complained much of pain in the knee and hip, aggravated by the least attempt at passive movement or pressure on the hip. The leg was flexed almost at 90 degrees, and the knee contracted. The left thigh was fourteen inches long, the right seventeen and a half inches. There were scars of former abscesses about the hip. He said that, twelve years ago, after a fall in which the hip was struck, he became lame, and could get about only by the aid of crutches. He was then a patient at University College Hospital, under the care of Mr. Erichsen, on and off for five or six years, and wore a leather splint. Later he attended the London Hospital, where a large abscess on the outer side of the thigh was opened. Increased painfulness of hip and knee and the formation of another abscess brought him to the Middlesex Hospital.

On March 13th an abscess pointed near the great trochanter, and was opened, letting out two ounces of pus. On the 23rd the discharge was ichorous and his temperature high. On the 25th another abscess pointed at the middle of the lower border of the gluteus maximus, and was opened. There was delirium at night. On the 30th an abscess was opened at the inner side of the thigh, near the scrotum, and exit given to some very fetid pus. On the 5th April the discharge was less, more puriform, and inodorous. The abscesses had been washed out daily with antiseptics. On the 23rd the hip was more swollen, and there was increased feverishness.

On May 6th, his condition having steadily deteriorated, he was placed under ether, and the sinus near the trochanter examined. It led behind the neck of the thigh-bone towards the pelvis, but it could not be tracked to its end. The thigh-bone was now found to be slightly movable in the acetabulum, and this without any grating. The repeated formation of fresh abscesses and the persistence of the sinuses were taken to indicate the presence of sequestra in the acetabulum. The upper end of the femur was therefore cut through, and the anchylosed remnant of the head, with the trochanter, was with some difficulty cut out piecemeal, and when this had been done, a considerable sequestrum was found lying loose at the lower and front part of the acetabulum, where there was a perforation. An abscess opening at the under surface of the neck of the thigh-bone ran for about six inches down the interior of the shaft. The lining pyogenic membrane, thick and smooth like a mucous, bled so freely that it was necessary to plug this tubular cavity with a long piece of lint. A drainage-tube was inserted into the acetabulum; the wound closed after being washed out with a solution of zinc chloride. The bent knee did not allow the application of a De Morgan's splint; extension and fixation were therefore maintained with weights acting on a cord attached by broad adhesive straps to the thigh.

He was greatly shaken by the operation, and rallied slowly. He could not be kept quiet, and it was not possible to contrive any apparatus which should efficiently fix the joint. The contracted knee made a dorsal posture impossible, except by considerably flexing the thigh.

After struggling through the summer, it became evident that amputation at the hip alone offered him a chance of recovery. This was done early in October. The limb was first bandaged with an elastic roller (Esmarch's), after which Lister's tourniquet was screwed down on the abdominal aorta. Lateral flaps, including only the skin and underlying fatty tissues, were cut from without and reflected, and then the muscles divided circularly close at the face of the pelvis (Guthrie's method). The edges of the wound in great part quickly united, and there was much less suppuration than is usual with large muscular flaps in this situation.

He was much less shaken by this operation than by the excision (though now more feeble), and he quickly improved; his appetite became remarkably good, his diet for several weeks consisting of a mutton-chop and a beefsteak, two eggs, a pint of strong beef-tea, and a pint of milk, bread, eight ounces of brandy, and four ounces of port wine. He made flesh, and he has been able to leave his bed; but as one of the sinuses which still remain open (though the discharge from them has become much less) bled slightly, it was thought prudent to keep him still recumbent. There is a good prospect of his ultimate complete recovery, but should this not happen, the immense relief the amputation has afforded will have thoroughly outweighed the immediate risks connected with it. He will leave in a few days for the Margate Infirmary.

WEST LONDON HOSPITAL.

EXTRACTION OF A CALCULUS FROM THE BLADDER THROUGH A VESICO-VAGINAL FISTULA; RECOVERY AND DEPARTURE FROM THE HOSPITAL; DEATH THREE MONTHS AFTERWARDS.

(Under the care of Mr. TEEVAN.)

SARAH B——, aged sixty-six, was admitted into this hospital on August 25th last. She stated that about fourteen years ago she began to suffer pain every time she micturated, and that three years ago the urine became very thick, and was accompanied with a discharge of matter. In April, 1872, she was attacked with retention, and her doctor had to draw off her urine several times a day for a fortnight. Her daughter then learned how to use a metal catheter, and she had henceforth to pass it many times a week on her mother. Nine months ago the urine became very offensive, and dribbled away night and day. Last February "pieces of grit" began to pass, causing much pain, and for the past two months her sufferings had been so severe that she was obliged to take opium daily to procure rest. The patient was born in Essex, and suffered from rheumatism, but not from gout. None of her family had ever had stone.

When the patient was admitted she was tolerably plump, but there was a hectic flush in her cheeks, and the expression of face was indicative of much physical suffering. The tongue was dry and brown, the skin hot, and the pulse quick. On the sacrum there was a small sore, and an offensive and urinous odour emanated from her.

On August 29th the patient was examined by Dr. Wiltshire and Mr. Teevan. When the forefinger was introduced into the vagina, a fistula admitting the tip of the finger could be felt in its roof, and a stone, apparently of small size, was struck by the sound, lying close to the fistulous aperture.

On Sept. 1st, at 3 o'clock P.M., the patient having been put under the influence of ether, Mr. Teevan introduced a pair of narrow-bladed forceps into the bladder through the vesico-vaginal fistula, and, having grasped the stone, which was lying above the hole, extracted it by gentle traction. The calculus was phosphatic, ovoid in shape, and measured 1⅛ in. long, and 2¼ in. in circumference. The knife was not used, but a few drops of blood escaped from the distended edges of the fistulous opening. The bladder was then examined with the finger, and found to contain a large quantity of mortar-like débris, which were removed with a small scoop. The viscus was then washed out, but no attempt was made to close the fistula, as the parts were in too unhealthy and inflamed a condition to admit of any operation for that purpose. The patient's sufferings ceased after the removal of the stone, but she still complained of a "soreness" owing to the urine dribbling away; and, at her own request, she left the hospital on Sept. 22nd.

Soon after her return home she again began to pass pieces of "grit," accompanied with much pain. Not long afterwards the patient's feet and legs became dropsical, and she died on December 6th, rather more than three months after the extraction of the stone.

Mr. Teevan remarked that the removal of the calculus was imperatively called for on account of the patient's great sufferings. As there was a vesico-vaginal fistula, which was capable of being enlarged by gentle pressure, advantage was taken of its existence to remove the stone through it. The extraction of the calculus was followed by immediate relief, and no constitutional disturbance was set up. If there had been no artificial opening, the removal of the stone would have been best effected by incision, as that method would have caused less shock to the patient than the so-called process of rapid dilatation, which was, in reality, violent laceration of the parts, as evinced by the amount of blood lost in that manipulation. The vagina and edges of the fistula were so studded with phosphatic deposits that no operation for the closure of the opening would have been desirable. What caused the fistula, which was apparently only nine months old? Was it the result of an ulceration attending chronic cystitis, or was it brought about by the employment of a metal catheter by a non-professional, in a bladder which had undergone serious organic alteration? Both elements, probably, had a share in the result.

ROYAL NAVAL HOSPITAL, LISBON.

CASE OF CALCULUS IN THE URETER.

(Under the care of Staff-Surgeon WILLIAM H. LLOYD, M.D.)

H. W——, aged twenty-seven, private marine, was sent to the hospital from H.M.S. *Immortalité* on October 16th, 1874. He had been on the sick-list on board for the previous eleven days, suffering from hæmaturia, with pain and tenderness in the region of the bladder and frequency and difficulty of micturition, these symptoms having been ushered in by a sharp febrile attack.

When admitted into the hospital, the pyrexia had subsided and the irritation of the bladder was less; the urine was alkaline and fetid when passed, and deeply coloured by blood, depositing a copious sediment of ropy blood-stained mucus. The urine could not be retained for more than two hours together, and was passed in quantities of an ounce and a half at a time. After passing water the pain and straining became more severe, the former extending along the urethra to the glans penis. The prostate was enlarged and tender, the passage of a sound over it causing intense pain. There was some lumbar pain and tenderness on pressure along the course of the right ureter. A sound had been passed into the bladder on board his ship, but no calculus could be detected. He was of fairly good physique, and presented no appearance of renal disease. He stated that some years ago he had suffered from lumbar pain, but nothing very serious.

After admission he was treated by warm hip-baths and fomentations; buchu and hyoscyamus, with barley-water, &c., were given, and subsequently the tincture of the perchloride of iron and balsam of copaiba. Several times he improved so much that he seemed to be in a fair way for recovery, but soon relapsed, each relapse being accompanied by a febrile attack. On three occasions, when a lull in the symptoms permitted, the bladder was carefully explored with a sound, but no stone was discovered.

On the 15th of December all his symptoms became aggravated, and abdominal pain and tenderness came on with constant vomiting, which it was impossible to check. The urine grew to the consistence of syrup and the colour of port wine, being abominably fetid, and voided with great pain and difficulty, a tablespoonful at a time. He became rapidly emaciated, and died on December 30th, after having suffered great agony for the last few days.

Post-mortem examination, twenty hours after death.—The bladder was contracted to the size of a small orange, and had a capacity of about two ounces; walls much thickened; mucous membrane dark-grey in colour, rough, and sacculated. Adhering to it were several small pedunculated excrescences about half an inch long, their substance re-

sembling lately organised lymph. The prostate was much enlarged. The substance of the left kidney had almost disappeared, the pelvis being dilated into a sacculated pouch capable of holding eight or ten ounces, and containing pus, blood, and urine. The ureter was much dilated as far as the brim of the pelvis, where was a constriction, below which was lodged a large crooked calculus of irregularly fusiform shape, largest at its lower end, which was rounded, and curved to the shape of the pelvic wall, and lay in a cul de sac formed of the dilated ureter, pushed downwards just before its opening into the bladder; this latter orifice was of normal size. The upper end of the calculus tapered almost to a point, which was hooked so as to lie over the brim of the pelvis, thus fixing against the bone the whole intra-pelvic portion of the ureter. The calculus was composed of lithic acid, with a superficial layer of triple phosphate at its upper end. Length, 5½ in.; circumference at base, 2½ in.; weight, 402 grains. The right kidney was fatty and disorganised; weight, 20 oz. Pelvis and dilated ureter filled with grumous blood and fetid pus. Other organs healthy.

The course of the disease appears to have been this:—A renal calculus descending through the ureter, and being just too large to pass through the orifice into the bladder, was arrested at this point. As it increased in bulk it also, by a process resembling the growth of a stalagmite, pushed upwards by a tapering end towards the kidney. During this growth, by its obstruction of the duct, it dilated, and eventually destroyed the kidney at its own side; and as it grew in length it gradually interfered with the movements of the bladder, finally tying it down by the ureter to the walls of the pelvis, and so mechanically preventing its dilatation. Hence followed cystitis, with the symptoms of vesical calculus, and in due course consequent degeneration of the right kidney.

The case is no less interesting in a clinical point of view than as a rare pathological specimen. The symptoms of a severe case of calculus in the bladder were so closely imitated that, even though no stone could be detected, it seemed possible up to the last that one might still have eluded the sound by being lodged either in a sacculus of the bladder or else in the prostate, and the large size and tenderness of the latter encouraged this possibility and added to the difficulty of the diagnosis.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

AT the ordinary meeting of this Society, held on Tuesday, March 16th, the President, Mr. George Pollock, in the chair, several important specimens were exhibited. A case of intestinal obstruction brought forward by Dr. Mahomed, led to some remarks by Mr. Spencer Wells on the occurrence of jaundice and bile in the urine under these conditions, which led to some slight discussion. Mr. Wood showed two remarkable trophies of surgical skill—one, a tumour involving the whole scapula, in which that bone was excised with the mass; and the other a tumour springing from the zygomatic fossa, and displacing the jaws.

At the commencement of the proceedings, the President announced that the paper containing the heads of Dr. Bastian's thesis, with which he is to open the discussion at the next meeting, would be laid on the table, and published in the medical journals to give members the opportunity of considering his propositions.

The report of the Morbid Growth Committee on Dr. Yeo's specimen of Tumour of the Heart was then read by Mr. Wagstaffe. They found that the irregular growth, which occupied the cavity of the left ventricle, extended apparently from the musculus papillaris, where it formed a mass about two inches long by one inch thick, into the wall of the heart, where its limit was not determined, as it was evidently infiltrating. On section, it was white, firm, exuding no juice, and showed no signs of degeneration. Microscopic examination showed—(*a*) hypertrophy of connective tissue between the healthy muscular fibres; (*b*) subsequent accumulation of embryonic cell-growth in the same position; (*c*) ultimate compression and absorption of the muscular fibres by the increased development of small cells imbedded in a matrix, at first structureless, but afterwards fibrillated or fibrous. They looked upon the growth as an infiltrating syphiloma, of especial interest on account of its large size and the absence of the ordinary degenerative changes. The report was signed by Dr. Moxon and Mr. Wagstaffe.

Mr. JONATHAN HUTCHINSON brought forward a living specimen of Skin Disease (in an infant) in association with Disease of the Nervous System. The child, now two years old, was born of healthy parents with total absence of any hereditary taint. Exposure to cold a few days after birth was followed by severe bronchitis and repeated attacks of convulsion. Within a week the whole skin of the body became red, presenting large vesicles in places, subsiding after some weeks, and leaving large scabs. A drawing was exhibited showing the condition of skin at the end of six months. The skin of the trunk and limbs was then mottled curiously by what appeared to be extremely superficial cicatrices, which subsequently became pigmented, and a few scabs existed on the outer side of one leg and bend of elbow. The right eye had been excised for inflammatory effusion between the retina and choroid, and the sight of the other eye is impaired. The child is very ill-developed, looking scarcely older than three or four months; it makes no attempts to stand, and has only four or five teeth; the head is small, but the anterior fontanelle is closed. Its mental condition is very imperfect, and it can as yet barely speak. Mr. Hutchinson could give no name to the disease, not having met with a similar case. The history of convulsions, and the limitation of the eruption to the trunk and limbs, pointed to a spinal origin, but the distribution of the pigmented patches was quite independent of any nerve tracts. It would seem as if the original affection were a general dermatitis, which had left exceedingly superficial scars, the skin remaining soft and supple. The left half of the body and the left limbs are rather more widely affected than the right.—Dr. MURCHISON quoted the case of a gentleman, aged forty, in whom, after exposure to a severe hailstorm, in which the hail beat forcibly on one side of the face, that side of the face and neck became in a few days more pigmented than the other side, without any preceding inflammation, although he had suffered much from the cold at the time. Gradual atrophy of the affected half of the face also followed; and ultimately the abnormal pigmentation extended round the neck to the opposite side. There was no facial palsy.

Mr. CROFT showed a living specimen of Chronic Herpes. The patient, a girl ten years old, had been under his care in 1872 for a nævoid growth on the left side of the chest, evidently a vesicular eruption. He brought the case to the Society at the time, having excised the tumour, which occupied the seventh intercostal space. Mr. Croft stated that it was then thought by some that the vesicular eruption was connected with the nævus, and by others that it could not be herpetic in character, which he believed. Recurrence of the eruption on the site of the scar confirmed his original opinion, vesicles attended by pain having continued to appear from time to time since four months after the operation. There is much tenderness over the cicatrix, pressure upon which induces sickness and fainting.

Dr. MAHOMED showed a recent specimen of Intestinal Obstruction, taken from the body of a man aged eighteen, admitted into hospital on March 5th. Eight days before death a meal of badly-cooked potatoes was followed by vomiting, which became continuous and fæcal. There was constipation, but no passage of blood, and no tumour; slight symptoms of general peritonitis; the pulse, however, remaining full but quick, and the temperature being below normal. Death ensued within a week, and post mortem a loop of small intestine thirty-three inches in length was found to be included within a fibro-vascular cord, which passed from the free border of the mesentery three feet

above the ileo-cæcal valve to the abdominal parietes at the umbilicus, making one turn and a half round the included bowel. Immediately below the point whence the band was given off was a small diverticulum (probably the remnant of the vitelline duct) of the ileum. The cord, which was completely invested in a fold of peritoneum, divided into two branches before reaching the umbilicus, one being continuous with the superior vesical artery. Dr. Mahomed thought the cord was formed by the hypogastric artery, which took an abnormal origin from a branch of the superior mesenteric, being joined by a branch of the superior vesical artery just below the umbilicus. The obstruction occurred at the point where the cord joined the mesentery, but there was no strangulation. There was slight local peritonitis. He inquired whether the inclusion of the intestinal loop had been recent or of old standing, the fatal constriction being due to the vomiting which ushered in the attack?—Mr. SPENCER WELLS said that in two cases of intestinal obstruction he had lately seen, one following ovariotomy, bile pigment had occurred plentifully in the urine. When obstruction took place high up, suppression of urine often occurred; but in these cases the seat of obstruction was low. He showed a specimen in which the intestine had become involved in adhesions formed after tapping an ovarian cyst. Here the obstruction was ushered in by severe vomiting, and the urine gave intense bile reaction. —Mr. WOOD inquired whether the hypogastric artery was present on the side of the bladder; he had never seen a case in which it arose from the superior mesenteric, and thought that the case was an example of persistent omphalo-mesenteric duct, which vessel might have formed anastomosis with the obliterated hypogastric.—Dr. MURCHISON, referring to Mr. Wells's observations, stated that he was unaware of the coexistence of bile in the urine and intestinal obstruction. He would like to know what constituents of the bile were found, the acids or pigment. There must have been distinct jaundice if the reaction was decided; and on Mr. Wells stating that in one case only was there marked jaundice, he said that it was contrary to his experience for jaundice to be a common symptom of intestinal obstruction. —Mr. HULKE stated that in two cases of obstruction of the small intestine by fibrous bands, no obvious change in the urine was noticed.—Mr. HUTCHINSON said that suppression of urine, occurring in cases of obstruction high up, was generally attributed to the loss of fluid by vomiting. There was deep jaundice in the case of intussusception in a dog, which had recently been exhibited. The specimen was referred to Messrs. Hulke and Wood for report.

The PRESIDENT then showed the specimen of Molluscum Fibrosum of which he had exhibited photographs at the last meeting. The patient never rallied from the operation, dying about a week after it was performed. Hæmorrhage from the large vessels (of the size of the radial) supplying the mass had been well controlled by the basal ligature.

Mr. BARWELL showed a specimen of Tumour of the Wrist, which was of five years' growth, which he had removed from a woman fifty-one years of age. It was nodulated, adherent to skin, but movable over the annular ligament, the nodules being separate and movable on one another. It was partly cartilaginous, partly calcified, and contained a stroma of spindle cells. The specimen was referred to the Morbid Growths Committee.

Mr. BARWELL also showed a specimen of Myeloid Tumour of the Head of the Humerus, removed from a child ten years of age, in whose family there appeared to be great disposition to this form of malignant disease. It arose after a fall on the elbow. It had recurred after the operation within the coracoid and acromion processes of the scapula. It presented the typical characters of myeloid sarcoma.

Mr. WOOD exhibited a remarkable specimen of Tumour of the Scapula of the left side, removed from a man twenty-four years of age. When admitted, the growth, which was very large, invested the anterior and dorsal aspects of the scapula, causing that bone to protrude posteriorly. The patient was delicate, and at the time of the operation, which was performed under ether, was suffering from slight bronchitis. Mr. Wood then fully described the steps of the operation, stating that his first object was to ascertain how far the scapula was involved, for he wished to save the arm and to remove as little of the scapula as possible. A preliminary incision with this object was made immediately below the spine of the scapula, and finding that the coracoid and neck were involved in the growth, he determined to excise the whole bone. This was done by means of a T-shaped incision along the spine and base of the bone, then, by dissecting down to the deep fascia, the vertebral border was raised. The subscapularis and serratus magnus muscles were found to be infiltrated, and internally the growth closely invested the brachial plexus, so that some of the tumour was left behind; but chloride of zinc was freely applied. There was free general bleeding, but only two important vessels—the posterior and dorsal scapular arteries—required ligation. The greater part of the wound healed by first intention, and a large drainage-tube was inserted, and chloride of zinc freely injected. At present the patient sits up a little every day, and the wound is contracting rapidly. Although evidently malignant, the growth may, perhaps, be completely removed by use of the chloride of zinc. The case recalled one under Sir William Fergusson, in which a tumour of like nature and seat had involved the brachial plexus. Here amputation of the whole limb was practised, and there had been no recurrence.

Mr. WOOD showed also a specimen of Fibro-fatty Tumour of the Zygomatic Fossa, removed from a boy aged twelve. The tumour had caused marked outward bulging of the zygoma and outward displacement of the angle of the lower jaw, while within the mouth it had pushed the alveolar border of the superior maxilla inwards, so that the opposing rows of teeth were separated by an interval of an inch. The tumour had been growing for five years, and treatment by pressure, puncture, painting with iodine, &c., had been tried before the patient came under Mr. Wood's care. The operation performed to effect its removal was as follows. An incision two inches and a half in length was made in the line of the wrinkles on the temple, dividing the anterior branches of the temporal artery, through the temporal muscle. Another incision was made inside the mouth to the inner side of the duct of Stenson. The fingers being introduced within the ramus of the jaw and the zygoma, the limits of the tumour were readily defined. It was then removed, partly above the zygoma and partly through the mouth; and, except for its firm attachment to the zygomatic ridge, its extraction was effected without difficulty. The cavity left was well sponged out with chloride of zinc, and a drainage-tube inserted. The patient made a good recovery. Pressure by means of bandages is being applied to the zygoma to restore its shape. The general characters of the growth were those of a fatty tumour, but some of the cells met with in it resembled those found in nasal polypi.—Mr. MAUNDER had recently had under his care two cases of naso-pharyngeal polypi, both of which had found their way into the zygomatic fossa. One patient died from shock following the severe operative procedures; and in the other case, the growth, which sprang from the base of the skull, could not be completely eradicated. In answer to Mr. Wood, Mr. Maunder stated that the character of these tumours was fibrous.—The PRESIDENT inquired of Mr. Wood whether there was much blood lost in the operation for removal of the scapula; and on that gentleman replying that the bleeding was chiefly due to oozing and not to division of large vessels, he remarked that in one of two cases in which he had operated, compression of the subclavian artery was practised during the operation with good result in restricting the hæmorrhage.

Both Mr. Wood's specimens were, at his request, referred to the Morbid Growths Committee.

Mr. KNOWSLEY THORNTON showed a specimen of an Ovarian Cyst with Papillomatous Growth in its Interior. The patient had suffered for three years from pain in the hip, and came under the care of Mr. Spencer Wells presenting signs of cystic disease of the ovary. Tapping was practised. The fluid withdrawn, besides presenting the characters of fluid from simple cysts, contained a large quantity of round cells and protoplasmic masses. Its ovarian character being thus established, it was removed. The cyst proved to be unilocular, its wall formed of delicate vascular connective tissue, and its interior lined by a layer of squamous epithelium. Springing from the lining membrane were cauliflower-like masses, consisting of papillomatous outgrowths in various stages of development. Mr. Thornton described in detail the growth of these papillary buds from the lining membrane, his description coinciding with that given by Dr. Wilson Fox, only he believes them to be more common than Dr. Fox thinks. These cysts are

evidently enlarged Graafian follicles, and to be distinguished from parovarian cysts, the seat of which they may come to occupy as they increase in size. The specimen shown by Mr. Wells earlier in the evening was one of parovarian origin, which had come to occupy the site of the ovary. The distinction was very important, because of the risk involved in tapping ovarian unilocular cysts, from the transference of the epithelial elements to the peritoneal surface, and their growth in that membrane. He had seen two cases of this mode of dissemination of these active elements. From this point of view, an ovarian cyst arising from dropsy of a Graafian follicle must be regarded as malignant, and only to be treated by ovariotomy.—Mr. SPENCER WELLS bore testimony to the great value of the microscopical examination of the fluid, in all cases of cystic disease, as a means of diagnosis between extra-ovarian and ovarian cysts, and as a guide to the treatment by tapping or ovariotomy.

The meeting then adjourned.

CLINICAL SOCIETY OF LONDON.

THE meeting of this Society was held on the 12th inst., Sir W. Jenner, Bart., President, in the chair. Several interesting cases were brought forward and discussed; amongst others, a very curious case of hypertrophy of the face by Mr. Barwell; and a typical instance of the abuse of narcotics and stimulants by a hypochondriac, by Dr. Whipham.

Mr. BARWELL exhibited a case of Hypertrophy of the lower part of the Face, of a very remarkable character. The patient, who was a sawyer, twenty years of age, gave the following history of his complaint:—He stated that about five years ago he went to bed one night perfectly well, and on the following morning, on waking, he found that his face was distended and swollen, and the mouth drawn to one side. The swelling was unaccompanied by heat, pain, or redness; and, with the exception of a copious discharge from the nose, there were no symptoms. Since then a cold caused an increased swelling of the face; but there had been no pyrexia. The patient thought that the swelling was as large at first as it is now; but, as it was not inflammatory, Mr. Barwell thought he must be mistaken in this particular. At present the swollen and hypertrophied condition is very marked, and causes a great deformity of the face. The cheeks are much thickened, forming a pyriform swelling with its narrow end upwards, the swelling beginning at the edge of the jaw and extending back to the border of the masseters; it terminates at the inner corner of the eye, the greatest swelling being in the lower part of the face and as high as the malar bone. The lips are chiefly hypertrophied; they are greatly thickened, everted, pouting, and almost pendulous. The swelling is soft and uniform, and apparently consists in a simple hypertrophy of the cellular tissue, and there are no cracks or induration of the lips. There is no hypertrophy of the tongue, but possibly its mucous membrane is somewhat thickened; the soft palate unaltered. The jaws are unaffected. Mr. Barwell considered the case a very rare one, occurring as it did without any injury to account for it, and without any obvious textural change. From the situation of the swelling it was evident that it lay in the region supplied by the facial arteries, which were moreover obviously enlarged. In a side view the appearance of the lips was very similar to that of a drawing of hypertrophy of the labial glands in Mr. Bryant's work on Surgery; but there was no such condition here.—Mr. HOLMES thought the most interesting thing for surgeons to know would be the pathology and proposed treatment of the case.—Mr. BARWELL was unable to explain the pathology; he supposed that the condition might be due to a lesion of the vaso-motor nerves. The facial arteries were enlarged and gave an increased blood-supply, but this might be a result of the increased growth. As regarded treatment, he proposed to ligature both facial arteries next day, and hoped thus to reduce the swelling, although he did not expect to get rid of it entirely. Mr. Bryant advised that the whole of the submucous tissue should be dissected away in such cases, but this he would be loth to do.—Mr. HOLMES inquired whether the swelling might not be reduced by some local means, such as incisions into the hypertrophied tissue, the greater part of which would be readily accessible from the interior of the mouth, and by keeping open the wounds for some time. This plan was successful in cases of chronic œdema of the connective tissue. The effect of ligature of the arteries would be interesting to see. He thought, however, that free scarification, or cutting out pieces from the inside, would answer the purpose.—Dr. EASTES mentioned a case which had been under the care of Mr. Birkett, at Guy's, in which he stripped off the mucous membrane along the length of the lips, and drew the edges together with sutures. The patient was relieved.—Sir WM. JENNER pointed out that there was no history except that given by the patient himself, and that a patient often thinks that a condition has come on suddenly when it has existed for some time. A boy of fifteen could hardly be trusted to observe his own face closely, and probably some inflammatory attack had drawn his attention to a condition which had existed before.—Mr. BARWELL was aware of this difficulty. He promised to exhibit the patient again, after the ligature, if possible.

Dr. DYCE DUCKWORTH showed a case of Favus, of typical character, which was under his care. The disease is getting rare in London, although still frequent in Edinburgh, and common in Germany. As a proof of its rarity, during four years, out of four or five thousand cases of skin disease, he had only met with four of favus. The patient was a boy eight years old, and had had the disease for sixteen months, and was said to have been nearly cured at one time; the head was now nearly covered, and there were one or two patches in other parts of the body. There was no history of contagion, but some fellow-lodgers were said to have had some skin disease. The cat in the house was said to be healthy. The case presented the typical characters of the disease, especially the yellow, cupped crusts and the mousy odour; and the achorion Schönleinii was found in abundance under the microscope. The treatment proposed to be adopted was poulticing, followed by epilation and local application of hyposulphite of soda and sulphurous acid, together with good diet, tonics, and cod-liver oil.—Sir W. JENNER remarked that the cases were usually very obstinate, and the disease recurred, the patients going from one hospital to another, so that half a dozen cases of favus would give six at each of the London hospitals in a few years.—Dr. DUCKWORTH stated that this patient had been only once a patient before, and that was also at St. Bartholomew's Hospital.

Dr. WHIPHAM read the notes of a case of fatal Pleuro-pneumonia in an Opium-eater. The history of excessive use of opium or morphia extended over twenty years altogether, and, in addition, alcohol, cannabis indica, and bromide of potassium were taken in excess at various intervals. The case was of interest as a typical one of the kind. The patient, who was first seen by Dr. Whipham in April, 1870, was a gentleman fifty years of age. Fifteen years before he had received an injury in a railway accident, which was said to have injured his back and leg, and he did not recover for three years. Ever since that time he had complained of pain in the rectum, and for this had injected half a drachm of laudanum every night into the rectum, at first under medical advice. He was examined by a London surgeon, who declared the rectum healthy. The quantity of opium was gradually increased from half a drachm to a drachm every day. Things went on thus for about ten years, and then an effort was made to leave off the opium, and the patient abstained entirely for four months. He became extremely restless, suffered from vomiting and purging, together with catarrhal symptoms—sneezing, running at the eyes and nose, in fact all the symptoms of a severe cold, although he had not suffered from one for ten years. Chloroform was tried, but without relief. He was obliged to keep in bed for six weeks, and when he got up was quite unable to work. He therefore resumed his habit of taking morphia instead of opium, but in a less dose. It was ascertained from a friend who had known him many years that he was always hypochondriacal, and that his father had died from cancer of the rectum in 1865, from which time the patient had begun to fancy that he was suffering from the same affection. When first seen

by Dr. Whipham the patient was in the habit of injecting two or three grains of morphia at a time into the rectum, and repeating the dose at intervals of fifteen minutes two or three times till he regained confidence. He was suffering from want of sleep and a dread of breaking down. The bowels were regular, the motions normal, pupils contracted and half their size. The morphia was gradually reduced from about fifteen grains a day to half the quantity, and the resulting sleeplessness treated by chloral, given in doses of fifteen grains by the rectum. The chloral produced flushing of the eyes and face. When only six grains were taken he became nervous and was purged, and he then increased the morphia, but kept it down to ten grains. The appetite failed, and great prostration ensued, and the patient grew so shaky that he required to take wine frequently, a pint of sherry being a not unusual dose. The chloral was also increased, a drachm in four hours being a not infrequent dose. Dr. Whipham did not see him again for two years and a half. He then found that he had made several attempts to leave off the opium, but that diarrhœa and catarrhal symptoms had always ensued. He had, moreover, taken chloral frequently, and, in addition, took large quantities of sherry, brandy, and champagne. He had suffered much from dyspepsia recently, probably owing to the alcoholic excess. When seen again by Dr. Whipham he was suffering from the symptoms of commencing acute pleuro-pneumonia, which speedily increased, and in spite of stimulation he rapidly sank. A noteworthy feature of the attack was the great revival which followed a dose of morphia injected into the rectum. A post-mortem could not be obtained. It was discovered that the patient had long been in the habit of buying about six drachms of extract of opium every month, and that, in addition, he had taken cannabis indica some time before, and drachm doses of bromide of potassium. His regular daily dose of morphia was twenty grains, with two bottles of sherry, and brandy and champagne in addition. In remarking on the case, Dr. Whipham observed that the fact that the gdru was taken by the rectum probably postponed the evil effects, and the dyspepsia, he thought, was to be attributed to the alcohol. He contrasted the case with that of De Quincey, who used to take as much as fifty-three grains of morphia daily. He thought the fatal result of the pneumonia due to the condition of system induced by the opium-eating.—Sir W. JENNER inquired whether the chloral was taken by the patient only when ordered, or of his own accord. He observed that the use of chloral seems to be growing enormously, whilst opium-eating, although not rare, is not by any means so common. People take chloral now for weeks, months, or years, and seem to think nothing of it.—Dr. DUCKWORTH remarked, as a curious feature in the case, that the quantity of opium taken tallied with that sold by the druggist. The habit of lying which these patients acquire usually leads them to falsify the amount.—Dr. SOUTHEY also made some remarks on the careful concealment of the fact of taking opium by such patients.

Mr. BARWELL read the notes of a case of Acute Necrosis of the Ulna, in which the whole shaft of the bone was removed. The patient was a child seven years of age, whom he saw with Mr. Cope, of Croydon. On May 16th, 1874, the child fell, and was supposed to have broken the ulna, and splints were applied, but these had to be removed in three days on account of swelling, and an abscess formed, which discharged on the 24th. Shortly afterwards she again fell down, and phlegmonous inflammation occurred, with a tendency to deep suppuration. On June 25th, six weeks after the first injury, she was seen by Mr. Barwell, who found that the forearm was swollen, red, and hot, and there was considerable deep swelling, with patches of a deeper pink colour, along the subcutaneous ridge of the ulna. The temperature in the mouth was 101·2°. Acute necrosis of the ulna was diagnosed, and on the following day Mr. Barwell cut down to the ulna by a longitudinal incision over its middle third. Only a few drops of pus were discharged, and these chiefly from the intermuscular septa. Beneath the periosteum was only a grumous substance, but the bone was roughened. On July 25th the wound had healed, with the exception of four sinuses with thickened lips, through which bone could be felt, and there was also deep enlargement, showing that new periosteal bone had been formed. On August 4th another incision was made, after the application of Esmarch's bandage, and the newly-formed bony shell exposed. It was found possible, after some separation by means of a narrow blunt periosteum chisel, to draw the sequestrum out entire through one of the cloacæ with forceps. The bone removed consisted of a great part of the shaft of the ulna, the epiphyses remaining uninjured. The wound was dressed with carbolised lint, and on Oct. 1st was entirely healed. On Jan. 14th the patient was well and the movements perfect. In remarking upon the case, Mr. Barwell said that he thought the term acute *necrosis* more applicable to the affection than acute periostitis. With reference to the statement made by Chassaignac, that pus is formed beneath the periosteum, Mr. Barwell stated that in reality it is curdy lymph mixed with blood, the pus being usually outside the periosteum. He advocated early incision down to the bone as soon as deep-seated pain, uniform deep and doughy swelling, and dark red mottled patches appear along the length of the bone; if left till the whole limb becomes swollen and the patches dusky and glazed, he considered it was left too long. — In the discussion which followed, Mr. CALLENDER inquired whether the ulna had really been fractured.—Mr. BARWELL thought not, from the appearance of the bone.—Dr. JOHN HARLEY observed that there appeared to have been considerable absorption of the necrosed bone, especially at the ends. He asked whether there had been discharge of fragments of bone, or whether there had been gradual disintegration and absorption or the formation of pus. — Mr. BARWELL thought there had in all probability been disintegration of the bone and discharge of pus from the sinuses, although what remained of the bone was perfect.—Mr. CHRISTOPHER HEATH, agreeing that the case was probably one of acute necrosis, thought that if there had been no fracture the case was much simplified, and was of a kind of not infrequent occurrence. The acute necrosis had probably been set up by the original injury. Remarking on the usual course of the disease, he said that unless pus occurred beneath the periosteum there was no acute necrosis. — Mr. BARWELL explained that there was a period of quiescence after the first injury, and the acute symptoms came on after the second. The periosteal membrane was entire when the first incision was made. — Mr. CALLENDER observed that it was not an uncommon thing in such cases to have a history of this kind: The child sustains an injury to the limb, which is quiescent for some time; then another injury is received, and acute necrosis occurs in the shaft of the bone, the epiphysis being intact. He thought it probable that in these cases the first injury affected one of the sources of blood-supply—either the nutrient artery of the bone or the periosteal vessels, especially the former; and that the periosteum became more vascular to make up for the deficiency, and was thus more ready to take on an inflammatory condition. At any rate, the condition was not rare clinically, and some cases he had examined after death seemed to confirm the view. — Mr. HEATH thought it would be very difficult to diagnose injury to the nutrient artery of the bone.—Mr. CALLENDER said that he only suggested it; it seemed a reasonable explanation.

The meeting then adjourned.

Reviews and Notices of Books.

Leçons sur les Anesthésiques et sur l'Asphyxie. PAR M. CLAUDE BERNARD. pp. 556. Paris: Baillière. 1875.

M. BERNARD commences his course of lectures on Anæsthetics by an historical account of the various methods that have been adopted to produce insensibility to pain, and has unearthed some curious facts. Amongst them he enumerates the plan used by the Assyrians of compressing the vessels of the neck in infants about to be circumcised, which probably acted by producing partial asphyxia; the plan in use amongst the Chinese from time immemorial of applying, according to M. Julien, some plant belonging to the urticaceæ; Moore's plan (1784) of compressing the nerves; Liegeard's plan of passing a tight ligature around the limb; the plan of the Greeks and Romans, who applied a kind of "stone of Memphis" macerated in vinegar, which

M. Littré thinks was only chalk, evolving, when acted on by the acid, carbonic acid gas—an agent known to dull the pain of a wound or burn. In the middle ages Theodoric, a surgeon of Bologna, sent his patients to sleep by making them inspire the vapours of a complicated mixture, the more important ingredients of which were mandragora and opium. Porta, writing in 1561, speaks of a volatile substance which required to be kept hermetically sealed, and might possibly have been an ethereal preparation. In 1781 Saussard employed narcotics, and then came Beddoes and Sir Humphry Davy's experiments, from which to the employment of ether and chloroform the transition was easy.

M. Bernard then proceeds to show that, in order that chloroform or other anæsthetic should act, it must be contained in the blood, and describes an easy method of demonstrating its presence. He proves, by ingeniously conceived experiments on the frog, that chloroform acts on the nervous centres. He shows that the anæsthetic effect is coincident with a condition of cerebral anæmia, and that the anæsthesia commences at the distal extremities of the sensory nerves, and gradually advances towards the nervous centres. The mode of action of anæsthetics he admits to be still obscure, but he thinks various arguments tend to show that it is due to a semi-coagulation of the proper substance of the nerve-cellules, which is capable of passing off with the elimination of the anæsthetic from the system. Amongst these arguments, the micro-chemical phenomena resulting from the exposure of muscle to the vapour of chloroform, and the flow of saliva during the action of chloroform, hold a conspicuous place. He suggests, and the suggestion is well worth consideration, that the fatal effects of chloroform, which are due to arrest of the heart's action in warm-blooded animals, and are not clearly deducible from its action on the sensory nerves, may perhaps be due to the existence in chloroform of two compounds, one being the true anæsthetic, the other a cardiac poison. What if these two exist, and could be isolated? For recovery from apparent death from the substance, he has no advice to offer beyond cold douches to the face and chest, and the application of a current of electricity down the spinal column. He next takes up opium, and after detailing its effects and showing the irregularity of its action, refers to the several alkaloids it contains separately. He names three—morphia, codeia, and narceia—as alone having narcotic properties. Of the other three, thebaine is toxic and produces convulsions, whilst papaverine and narcotine have no narcotic effect in whatever doses they may be given, but in large doses are toxic (convulsants). Narceine appears to be superior to morphia; it produces a sounder sleep, and on waking there is little or no headache. The combined action of chloroform and opium, and of chloroform and morphia, are then considered.

The second part of the volume is occupied with the phenomena of asphyxia, and especially with the toxic action of carbonic oxide gas, which, he shows, simply displaces the oxygen of the globules.

The Acts relating to Registration of Births, Deaths, and Marriages. By JAMES T. HAMMICK. Shaw and Sons.

The Law relating to Registration of Births, Deaths, and Marriages. By W. CUNNINGHAM GLEN. Knight and Co.

The Law concerning the Registration of Births and Deaths. By A. J. FLAXMAN. Stevens and Haynes.

THE three works above-mentioned, just freshly issued from the press, are useful text-books of law upon matters of which most people find it necessary to know a little, and medical men a good deal, in the course of their lives. By the statute of 1874 considerable changes were made in the English law of birth and death registration, and we have now the advantage of knowing what, in the opinion of three legal gentlemen, those changes amount to. We desire to be quite fair towards each of the authors, and therefore we may say, for the guidance of any of our readers who may be seeking for a manual of registration law, that for general practical purposes there is not much to choose between the three now before us. Mr. Flaxman's is limited to births and deaths only, but it is well got up, clearly arranged, and has a good index. We observe that he thinks it "remarkable that no provision is made for any payment to the members of the medical profession" for certifying the causes of death, and further, that he is an advocate for the employment of ladies as registrars of births and deaths. Mr. Glen's book is a second edition of one issued by him several years ago, but much extended and greatly improved. It comprehends all the Acts relating to the registration of births, deaths, and marriages, with extracts from the Factory, Vaccination, and other Acts in which registration matters are involved. A copious index is spoiled by a bad method of arrangement, and we take exception to Mr. Glen's reading of the 28th section of the Act of 1874, as implying that "any sanitary authority may require *every* registrar, no matter where," to make returns of deaths for sanitary purposes; which would be an absurd provision, even if it were not impracticable. Mr. Hammick's official position as Secretary of the Registrar-General's Office of course imparts to his manual of registration law (which is comprehensive, like Mr. Glen's) an authority likely to render it widely acceptable, and although not so freely annotated here and there as could be desired, its capital index makes reference particularly easy—an advantage not to be overlooked in these days.

The Monthly Microscopical Journal. Edited by HENRY LAWSON. No. LXXV. March, 1875.—This part contains:—1. The President's Address. 2. Studies in the Natural History of the Urates, by W. M. Ord. 3. An Account of certain Fungi Parasitic upon Plants, by Thomas Taylor, of Washington. With the usual notes and memoranda. Mr. Taylor's paper deals chiefly with the fungus called the "Black-knot" or Sphæria morbosa, which attacks cherry and plum trees in America. Dr. Ord figures and describes the different forms that urate of soda may present when separating from fluids containing different substances in solution.

Medico-Electric Apparatus; and how to use it. By Messrs. SALT, of Birmingham.—Messrs. Salt have a deservedly high reputation as makers of medical appliances and surgical instruments. In the little book they have now issued a description is given of every form of medico-electric apparatus in modern use, together with clear and concise directions for working the same. To practitioners devoting themselves to the attractive field of electro-therapeutics it will be found a most useful guide in the selection of instruments.

THE DISCUSSION AT THE PATHOLOGICAL SOCIETY.

THE following is an abstract of the paper with which the forthcoming discussion will be opened, entitled,

THE GERM-THEORY OF DISEASE; BEING A DISCUSSION OF THE RELATION OF BACTERIA AND ALLIED ORGANISMS TO THE VIRULENT INFLAMMATIONS AND TO THE SPECIFIC CONTAGIOUS FEVERS.

The analogy between zymotic processes and fermentations is one which has been long recognised, though the "germ-theory of disease" in its present form is a doctrine of modern growth. It has been based on the supposed resem-

blance between the two sets of processes. *Contagia* seem to be considered as allied to, if not identical with, *ferments*; and hence, after the promulgation of the vital or germ-theory of fermentation by M. Pasteur, which was founded upon the belief that all the ferments were bacteria, torulæ, or allied organisms, it became an easy step to imagine, and even adopt, the notion that all contagia might also be similar low independent organisms.

Recognising the vast importance of such a doctrine for medical science, the writer was induced to undertake a series of researches in order to test the validity of Pasteur's underlying doctrine of fermentation. Its general acceptance would almost of necessity have entailed most important modifications in our notions as to the true pathology, and consequently as to the treatment, of the most important diseases to which the human race is liable. As a result of these researches, the truth of Pasteur's exclusive theory has been challenged in favour of broader physico-chemical doctrines of fermentation; and the whole question is now (as the writer supposes), in the opinion of the most impartial critics, to be regarded as still *sub judice*.

In the interval, therefore, we may look into the truth of the germ theory of disease from an independent point of view.

The principal foundations of this theory seem to be of a theoretical nature. It is contended, with a considerable show of reason, that the multiplication of contagium within the body of the infected person is a process which can only be compared to organic growth and multiplication. There are, however, other means of accounting for the increase of contagium within the body which will hereafter be more fully explained.

In addition to the germ theory of disease in the most generally accepted sense of the term, there is a rival doctrine advocated by Dr. Beale which will be briefly referred to.

Applicability of the germ theory to virulent inflammations and their sequelæ: (gonorrhœa, purulent ophthalmia, diphtheria, erysipelas, hospital gangrene, pyæmia, septicæmia, &c.)

The notion that bacteria have a causal connexion with the process of infection in these diseases having been stated, and its origin explained, an opposite doctrine is then enounced—viz., that instead of being themselves the infective agents, or "carriers of infection," bacteria and their allies when met with in diseased fluids and tissues are for the most part actual pathological products engendered within the body. There is, in fact, the writer contends, a bacterial degeneration, which, though not so common and widespread in its occurrence, may claim to rank side by side with fatty degeneration.

The facts and arguments in favour of these respective views are then briefly summarised.

It is true that some of the considerations advanced in support of the latter doctrine may be explained by the hypothesis that all the tissues of man and higher animals are densely interpenetrated by undeveloped and indistinguishable germs of the lowest organisms. This hypothesis is held by Dr. Beale, but it may be met, and, so far as it appears to be an answer to the writer's doctrine, set aside by evidence of the most convincing nature.

But the notion (1) that germs of bacteria and allied organisms pre-exist (in some obscure way) within the tissues, (2) the notion that they enter from without and are habitually very numerously distributed throughout the tissues of the body, or (3) that they are very numerously engendered by a process of degeneration taking place within tissue elements, all seem equally opposed to the views of Professor Lister, and inimical to the theoretical basis on which he has allowed his antiseptic system of treatment to rest, however admirable this system may be in itself.

Applicability of the germ theory to artificial tuberculosis, syphilis, typhoid, typhus, relapsing fever, cholera, measles, scarlatina, small-pox, and other contagious fevers.

Although no real boundary-line exists between the diseases considered in this section and those referred to in the last, the adoption of some such division is a matter of convenience in regard to the present discussion.

Many of the facts and considerations previously advanced in support of the writer's doctrine as to the relation of bacteria and allied organisms to the latter class of diseases, are also applicable in regard to the present series. No positive facts of much weight seem to be forthcoming in favour of the germ theory as applied to contagious fevers. Although these affections have always been regarded as "blood diseases," in only one of them does it appear that independent living organisms are to be met with in the blood of affected individuals at any stage of the disease. There is, therefore, here a *primâ facie* inherent weakness in the whole theory, which a more thorough examination tends rather to confirm than dissipate.

The facts and considerations which may be opposed to the existence of any causal relationship between bacteria and allied organisms and the specific contagious fevers are then briefly enumerated.

After some statements and explanations concerning the occurrence of organisms in the blood of relapsing fever patients, and in connexion with diseased tissues in ovine small-pox and typhoid fever, as revealed by the researches of Dr. Klein, the writer will make some brief concluding statements concerning (1) Pasteur's recent important modifications of his germ theory of fermentation; (2) upon the degree of relationship existing between zymosis and fermentation; and (3) as to the probable mode of action of ferments and contagia.

H. CHARLTON BASTIAN.

ON THE CHEMICAL STATICS OF THE BRAIN.

DR. THUDICHUM'S paper with the above heading, published in our issues of March 6th and 13th, requires the following table to render it complete.

TABLE SHOWING CONSTITUENTS OF THE BRAIN.

GROUP OF SULPHURISED PRINCIPLES.

Albumin—$C_{72}H_{112}N_{18}SO_{22}$

GROUP OF PHOSPHORISED PRINCIPLES.

Sub-group of Kephalins.

Kephalin—$C_{42}H_{79}NPO_{13}$
Kephaloidin—$C_{42}H_{79}NPO_{13}$
Oxykephalin—$C_{42}H_{79}NPO_{14}$
Peroxykephalin—$C_{42}H_{79}NPO_{15}$
Amido-kephalin—$C_{42}H_{80}N_2PO_{13}$
Compounds with $PtCl_4$; $CdCl_2$; Pb; Acids, Bases, and Salts

Sub-group of Myelins.

Myelin—$C_{40}H_{85}NPO_9$
Oxymyelin—$C_{40}H_{75}NPO_{10}$
Amido-myelin—$C_{40}H_{82}N_2PO_{10}$
Compounds as Kephalin

Sub-group of Lecithins.

Lecithin—$C_{42}H_{83}NPO_9$
Compounds as Kephalin

GROUP OF NITROGENISED PRINCIPLES.

Cerebrin—$C_{34}H_{63}N_2O_5$
Stearoconote—$C_{34}H_{63}N_2O_8$
Phrenosin—$C_{34}H_{67}NO_8$
Kerasin—$C_{46}H_{91}NO_9$
Extractive and Secretory Acids
Uric Acid and congeners
New Acid
Extractive Alkaloids No. 1 and No. 2
Urea and Amido-acids

GROUP OF OXYGENATED PRINCIPLES.

Cholesterin—$C_{26}H_{44}O$
Inosite—$C_6H_{12}O_6$
Lactic and Formic Acids
Fats and Fatty Acids

GROUP OF INORGANIC PRINCIPLES.

H_2SO_4; HCl; P_2O_5; CO_2; H_2O
K; Na; NH_3; Ca; Mg; Cu; Fe; Mn

THE LANCET.

LONDON: SATURDAY, MARCH 20, 1875.

WE have just received a copy of "The Sale of Food and Drugs Bill" as amended in Committee, and lose no time in pointing out in what respects it differs from the previous miserable measure, and to what extent it still requires alteration.

The title remains the same as before; and although the Bill deals expressly with the important question of adulteration as it affects articles of food and drink, that word forms, strange to say, no part of the title of the Bill, as in fairness it should undoubtedly do.

Clause 3, which prohibits the mixing and selling of injurious ingredients, remains the same as in the original Bill, the word "knowingly" still being retained. This retention nullifies to a great extent the value of this clause; and the House, when the Bill is again brought under its notice, ought to insist upon its withdrawal.

Clause 4 is similar to the preceding, but applicable to drugs. In this clause also the word "knowingly" is retained, and of course with the like injurious effect.

Clause 5 differs from that of the first Bill; but it is still objectionable. This clause prohibits the sale of articles of food and drugs "not of the nature, substance, and quality of the article demanded by the purchaser." It is true that the word "knowingly" is here omitted; but in place of it the words "shall sell to the prejudice of the purchaser" are introduced, so that if the seller maintains that what he sells is not to the prejudice of the purchaser, the latter will have no remedy under the Bill. Thus the seller would be capable of contending that chicory in coffee, or wheat-flour in mustard, was rather to the advantage of the purchaser than to his prejudice. Attached to this clause in the first copy of the Bill there were exceptions so numerous and comprehensive as to cover a multitude of adulterations and frauds. The number of these exceptions is now reduced; but those which are still retained are for the most part of a highly mischievous character, and if they should ever become possessed of the force of law they will work an infinity of harm. Thus, what can be worse than the following exception:—"Where any harmless matter or ingredient is mixed therewith for the purpose of rendering it portable or palatable, or of preserving it, or of improving its appearance." Under this clause, again, it would be quite practicable to defend the presence of chicory in coffee, of wheat-flour in mustard, and many other things—as the colouring of green tea. Another exception still retained is where the mixture is "the subject of a patent in force, and is supplied in the state required by the specification of the patent"; so that a manufacturer will only have to obtain a patent to be authorised to sell almost any kind of mixture he is capable of devising. A third exception is—"where the article is unavoidably mixed with some extraneous matter in the process of collection or preparation." This exception will allow of no end of dirt in our tea and our pepper. It will be contended that the dirt so often found in these articles is due to the process of collection and preparation; the fact really being that no necessity whatever exists why either the one or the other article should contain even a minute fraction of a percentage of earthy matter derived from the soil on which it is grown, and from which it is obtained. It gives, in fact, great encouragement to uncleanliness and dirt, which, under it, may be sold at the price of the article of food itself. The first of these three exceptions ought to be greatly modified, and the last two should be abolished altogether. Following the last exception these words occur,—"Provided that no article shall be deemed to be within any of the exceptions above set forth, if the matter or ingredient mixed exceed what is required for the purpose referred to." Here is a door opened for endless differences of opinion and disputes. Who is to determine whether the ingredient mixed exceed what is really necessary?

Clause 6 of the present Bill—the words "usages of trade" being omitted, and the penalty increased to £20—is much altered for the better.

Clause 7 provides that "a notice by a label distinctly and legibly written or printed on or with the article shall be given, to the effect that the article is mixed"; and it differs from the similar clause in the first edition of the Bill by the introduction of the words that the article so mixed shall not be "intended fraudulently to increase its bulk, weight, or measure." These words are obviously designed to place some limit upon the amount of admixture, as in the case of flour in mustard and cocoa, and chicory in coffee; but they will lead to endless disputes and difference of opinion, because it will be most difficult to prove a fraudulent intent even when three-fourths of the article consist of the added substance.

The next clause has reference to the prohibition of the abstraction of any important constituent of an article, and is improved by the omission of the word "knowingly."

We pass by all the clauses having reference to the appointment and duties of analysts and proceedings to obtain analyses, as to criticise these would extend this article to too great a length. But we would observe, first, that the appointment of analysts is simply optional, and not, as it ought to be, compulsory; and, next, that the present Bill does not contain any stipulation that the analyst shall possess either microscopical or medical knowledge, which are both required by the Act of 1872, which, though defective, was still in many respects very superior to the Bill of MR. SCLATER-BOOTH and MR. CHARLES READ, even in its present amended shape.

By Clause 16 it is provided that the refusal to sell any article exposed for sale shall render the person liable to a penalty of five pounds. This penalty is too small; and we would observe of the penalties in general that they are too light, that they are not increased for second offences, and that there is no provision (such as exists in the Act of 1872) authorising the publication and placarding of the names and addresses of those offenders who had been found guilty of repeated adulteration—a most effective and deterrent proceeding.

Clause 24 is the same as that in the present Act, and is

very objectionable. It provides that, "if the defendant in any prosecution under this Act prove to the satisfaction of the justices or the Court that he sold the article in the same state as when he himself purchased it," he shall be discharged from the prosecution. So here, again, a way of escape is made for the seller of adulterated articles. It ought to be rendered compulsory that the prosecution should be proceeded with against the actual adulterator.

Clause 29 embodies a provision relating to the examination of tea by the Customs on importation. It is nearly identical with that in the unamended Bill, but is rendered less effective by the omission of the word "unwholesome." This clause is so important that we make no apology for introducing it at length. It runs thus: "From and after the 1st day of January, 1876, all tea imported as merchandise into and landed at any port in Great Britain or Ireland shall be subject to examination by persons to be appointed by the Commissioners of Customs for the inspection and analysis thereof, for which purpose samples may, when deemed necessary by such inspectors, be taken, and with all convenient speed be examined by the analysts to be so appointed; *and if upon such analysis the same shall be found to be mixed with other substances or exhausted tea, the same shall not be delivered unless with the sanction of the said Commissioners, and on such terms and conditions as they shall see fit to direct, either for home consumption or for use as ships' stores or for exportation;* but if on such inspection and analysis it shall appear that such tea is, in the opinion of the analyst, unfit for human food, the same shall be forfeited and destroyed, or otherwise disposed of in such manner as the said Commissioners may direct." By this clause, therefore, the whole question of the adulteration of tea is to be in the hands of the Commissioners of Customs, who may direct that such adulterated tea, "mixed with other substances or exhausted tea," shall be delivered, "either for home consumption, or for the use of ships' stores, or for exportation." Under such a clause as this, designed apparently for the express purpose of encouraging the adulteration of tea, that article will still continue to be sold and consumed adulterated with foreign leaves, mixed with lie tea, sand, quartz, and magnetic oxide of iron, and painted with plumbago, Prussian blue, indigo, turmeric, China clay, and other analogous substances.

We would therefore say of this Bill, in conclusion, that, although it has been somewhat improved and strengthened by the alterations introduced into it, it is yet a very inefficient measure, requiring many further amendments, and in its present form is far less effective than the Adulteration Act it is intended to supersede.

THE Minister for War having referred, in his speech introducing the Army Estimates, to the vexed subject of Army Medical Organisation, we take the opportunity of recurring to it ourselves.

The advocates of the regimental and general staff systems have, as it seems to us, exhausted everything that can be said in favour of their own and against the views of those to whom they are opposed. The question as to what is to be the future organisation of the Army Medical Service we regard as one of extreme importance to it and the army generally. We can readily understand that men smarting under a sense of what they regarded as a breach of faith in the arbitrary act of cancelling their regimental appointments, in the curtailment of privileges embodied in a Royal Warrant which had been wrung from the Government after years of discontent, and then only after the Crimean war had laid bare the mismanagement and parsimonious administration which threatened the destruction of our military prestige—we can understand the feeling of irritation aroused in them by the Warrant of 1873. But what we cannot understand is, that a large section of medical officers should look with disfavour upon the emancipation of their service from the system that bound it down and brought it—from Sir ANDREW SMITH downwards—into unmerited disgrace during that war, and which would assuredly bear the same bitter fruit in any other campaign of similar magnitude. What was the complaint, then, and what has it ever been? That the Medical Service was overwhelmed with responsibility, but without power. The ablest documents of—whatever may have been said against him—one of the best and most energetic administrators in the world were treated as so much waste paper; his good name was temporarily covered with undeserved ignominy; and civilians were called in to reap the rewards and bear away the credit of having reorganised and reformed everything they came across. From that day to this has there ever been a time when the department was contented, able to hold its own, allowed to control and manage its own affairs, or shown itself capable of maintaining the respect with the army and the outside public that was due to it as a large and scientific body? If, as regards independence, economical or efficient administration, or the relative position that has been accorded to its members, the double system of organisation had been successful in the past, then, indeed, it would be worse than folly to change it; but it is notoriously otherwise. A grave feeling of discontent has been the chronic complaint of the department for years, varied every now and then by what may be termed acute exacerbations of the same disorder. Anyone glancing through the columns of the military and medical journals since the date of the Royal Warrant of 1858 will find abundant evidence in corroboration of this, and from no section of the Medical Service have the expressions of discontent been more numerous or more frequent than from the regimental medical officers themselves. And yet, strange as it may appear, no sooner is there the prospect of the department becoming in time independent and untrammeled than a body of men in it strive, might and main, to restrict its action and arrest its development by seeking to place it in perpetuity under the entire control of the military executive. This was not the position of the Medical Service of the American army; neither is it that of the same service in the German army; and, what is more, it is confidently expected that the French Medical Service will soon be altogether liberated from the control of the *Intendance*. Mr. GATHORNE HARDY stated that he had read a number of articles, and we have also made it our business to peruse most, if not all, the numerous pamphlets and communications that have appeared, and, whether the general staff, the regimental, or some hybrid

system or other be eventually adopted, we see no reason for altering the opinion, which has deepened into conviction, that the first, or departmental system, embodies the true principle of organisation—that which will admit of the proper development of the department, secure efficiency and economy in its administration, and hold out the promise of a better distribution of promotion and rewards, by enlarging the field of professional experience and affording a good chance for the recognition of the true merits and capacities of individual officers.

Regardless of, and even in opposition to, our own interests as medical journalists, we have long advocated an unpopular measure—viz., the substitution of a single system for that twofold division of the army medical officers which still exists, so that these officers should constitute one general corps of surgeons to the forces available for all duties. We have endeavoured to realise to ourselves what the Medical Service of the future might become if organised on a basis similar to that of the Royal Engineers, for example; if the department were, in fact, regarded as one large regiment, the members of which were attached to, but not an integral part of, the corps with which they did duty, just as an officer of the Royal Engineers would be under parallel circumstances.

Let us take Dr. HAMILTON'S pamphlet as the ablest exposition of the views of the advocates of the regimental system, in connexion with that by Deputy Surgeon-General Dr. GRANT on the general hospital system. Before discussing the subject, however, we must define what we include in the so-called "unification" scheme. We mean that all the officers of the department should be embodied into one corps, possess one uniform, be distributed into districts and appropriated to the work to be done, and not to regiments and batteries irrespective of there being any work to do; that they should be aided by a corps of properly trained subordinates; and that the hospitals should be fixed establishments, where the sick are received and treated until discharged, instead of being moved about in connexion with a regimental hospital; that on this Army Medical Service so constituted should devolve the responsibility of administering the hospitals, treating and disposing of the sick, and exercising a surveillance over, and advising on, all matters affecting the hygiene of the troops. To do all this, however, the measure of their responsibilities must be that of their powers; neither more nor less. There is here no room for talking of the relative advantages of the regimental, the departmental, or the mixed systems; for there is no possible reason that we can see why, from such a platform, the department should not be able to combine the advantages of all of them, while it avoids the disadvantages that would confessedly attend the exclusive adherence to and following of one. Now, we contend that this system, if properly worked, is capable of effecting the following results:—(1) Circumscribing the medical officer's duty and responsibility by a well-defined line; (2) economical administration; (3) the development of professional culture, the discovery of a medical officer's *métier*, and the direction in which his tastes and capacities are most likely to be useful to the State and advantageous to himself; and, lastly, it would, as regards the medical officers themselves, strengthen departmental discipline, develop a professional *esprit de corps*, and tend to bring about a fairer distribution of foreign service, with a better chance of fixity of tenure in any home district in which the individual officer happened to be located. We hope next week to indicate—for space will not allow us to elaborate the details—how these results might fairly be expected in time to flow out of such a system.

THE phenomena of sleep, profoundly interesting as they are, have added little to our knowledge of the physiology of the higher nervous centres, and least of all, probably, to our knowledge of mind. This is the more singular since the intellect is, during sleep, as far as we can judge, in a state of constant activity. The continuation of a series of mental phenomena through a condition of organic life so dissimilar from that of the waking hours might reasonably be expected to throw much light on the varied relations of mental action. But the fact is very different, and the condition of dreaming rather obscures than illuminates the working of mind. The waking and sleeping intellectual states are often entirely dissociated or connected only by apparently random links. The popular canon of interpretation of dreams, that their obvious meaning is to be reversed, hardly exaggerates their apparent independence of the conditions and influences which might be supposed most of all to affect their occurrence and character. Emancipated from the controlling influence of the sensory organs, in the sensory centres associated images are reproduced in unmeaning random, or fresh combinations of action originate; and in the resulting "visions of the night" the ordinary rules of causation and propriety are subverted in bizarre disorder.

Certainly the intrinsic study of dreams throws little light upon their physiology. It is only by a comparative examination of them, studying them in common with the other phenomena of sleep, that they can be in any measure understood. The characteristic of the state of sleep is the absence of all outward sign of consciousness and will, which are seemingly withdrawn from all connexion with the organs of sense, or with those of motion, by which their existence could be manifested. But the functions of the muscles and of the lower portions of the nervous system which immediately control the muscles are by no means dormant, as the sudden cramp and painful start sufficiently show. The spinal cord is awake and capable of function even in insubordinate excess, unrestrained by any higher centre. The action of the lower centres is restrained by the inhibitory influence which the higher centres exercise over them, and during sleep this is withdrawn. The muscular spasm, which rudely wakes the sleeper to the consciousness of pain, may never occur while the brain is active and alert; and, as far as can be understood, it is only in the withdrawal of a higher central influence that the difference between the states of the spinal cord in the waking and sleeping condition consists. Thus the same tendency of unrestrained excessive action obtains during sleep in both higher and lower centres. A very similar relation may be traced in the involuntary intellectual action which constitutes a dream. The will has absolutely no control over the train of ideas. They may

arise in apparent spontaneity, or more rarely as a consequence of some waking thought or state, and may run their course entirely uncontrolled and uncontrollable, uninfluenced not only by the will, but by the accumulated experience of the waking hours, so that the absurd inconsistencies and impossible relations of the fancied action excite no sense of doubt or wonder. They pass away as mysteriously as they commenced, and their track may be so separated from the lines of waking thought that, like a distant second image in diplopic vision, the existence of which may be unknown till an accident reveals its place and character, their occurrence may be unsuspected until some chance association reproduces them.

Thus the same tendency to unrestrained excess of action obtains during sleep in both higher and lower regions of nervous phenomena, in both brain and cord. And in some other details a further analogy may be traced. The physical sensation which excites a reflex movement is effective in proportion to its unaccustomed character. A sudden change of sensation may provoke the movement which a constant pain fails to elicit. Something of the same relation may be traced in dreams. Feelings and ideas which are dominant by day may be entirely absent in sleep—nay, be even "conspicuous by their absence." "Sleep, death's twin brother, knows not death"; and, although the statement of the Laureate has less accuracy than some of his aphorisms, it is sufficiently exact to illustrate the independence of the reproduced ideas on those from which they have arisen. Unfelt, in short respite, the burden of sorrow may vanish, while some chance perhaps unremembered association of the day before originates a train of ideas in happy contrast to the reality which returning consciousness reveals.

The influence of the physical organs on the mind in sleep is familiar to all students of mental physiology. Sensations unnoticed during the day may be sufficient to set up a train of ideas of definite character and vivid distinctness, and such sensations are especially effective when sudden and contrasted with those previously influencing the sensorium. As Dr. MAUDSLEY has pointed out, the characters of the delusion may be so determined by the organ diseased as to sometimes be the earliest indication of a subsequent malady, which may thus seem to be foretold during the dream, which had apparently no physical origin.

Such an effect of an organic derangement on the brain is no doubt the explanation of the peculiar delusion of motion through the air, which has lately furnished a daily contemporary with a subject for abundant correspondence. There is probably no one to whom the feeling of such passive locomotion is not common enough. No delusions are more vivid than those which, in the waking state, accompany the phenomena of vertigo and its allied sensations. A subjective sense of movement, too sudden, too intense to allow at once the consciousness to realise the contrary evidence of other senses, produces a conviction, sometimes invincible, of change of place in the individual or surrounding objects. It is, then, a matter of small surprise that when the other senses are in entire abeyance, as they are, for the most part, during sleep, a "swimming in the head" produces the distinct impression of "levitation"; but beyond this the phenomenon has no significance, and is only interesting as a train of ideas which can have had no counterpart in any preceding physical experience, and as an instance of the novel associations which may be provoked by the action of a sensory centre uncontrolled by remembered experience or correcting sensations of other organs.

THE time required to recognise and to demonstrate the recognition of the sense of taste has just been made the subject of an elaborate investigation by Herrn VINTSGAU and HONIGSCHMIED. The only experiments prior to these which have been recorded are those of v. WITTICH, who, with GRÜNHAGEN, as an assistant, found the mean time required to perceive a taste and register it to be 0·167 sec. The difficulties to be overcome, the authors remark, in order that reliable results may be obtained, are considerable; for, in the first place, different substances have very different penetrating power; and, in the next, the various parts of the tongue have different endowments in regard to flavours. The period of reaction will also vary according to whether the terminal organs of the gustatory nerve are simply excited, or whether it is required that the subject of the experiment should distinguish between two separate flavours. The instrument they employed in these experiments was a small canula, from which a minute brush, supported on a wire, and having a surface of about a square centimetre, could be protruded, loaded with the sapid substance; the back of the brush was in close proximity with a second wire, and the contact of the two closed the time-measuring current. This contact was effected when the instrument was applied to the tongue, and the instant of the perception of flavour was registered on a LUDWIG'S kymographion by a movement of the hand, if we understand the somewhat complicated arrangements aright. Four substances only were used for experiment—viz., bisulphate of quinine, common salt, sugar, and phosphoric acid, representing the four principal flavours. All volatile and odorous substances had of course to be excluded. It was found that only a few experiments could be made at a time, especially with the acid, even though the mouth was freely washed out with warm water, as the application of the brush became irritating, and the attention of the observer became fatigued, and the after-impression remained for some time. Herr HONIGSCHMIED submitted himself to very numerous experiments in regard to the sensitiveness of the tip of the tongue to flavours, as he proved to be possessed of unusual acute powers of perception in this respect. The result was as follows, expressed in decimal parts of a second: common salt, 0·1598; sugar, 0·1639; acid, 0·1676; and quinine, 0·2351. These experiments show clearly that the "reaction time," as the authors term it, is by far the longest for quinine, whilst it is much shorter and not very different for the other three substances. It appears, however, that considerable variations occur in different persons; or, in other words, a large allowance must be made for "personal equation," since, in the case of a Dr. D——, the time required to correctly recognise and indicate the perception of quinine was as much as 0·993 sec. And again, in other experiments, the sense of taste was so little developed in the subject of the experiment that he was unable to distinguish between the several substances applied.

Annotations.

"Ne quid nimis."

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT the meeting of the Council of the College of Surgeons, held on Wednesday last, Mr. J. Cooper Forster was elected by a large majority to the examinership, rendered vacant by the resignation of Mr. Hilton. There were three other candidates: Mr. Gay, Mr. John Wood, and Mr. Sydney Jones, the first gentleman being a member of the Council. Mr. Wood, whose claims were undoubtedly strong, allowed himself to be put in nomination only at the last moment, and his candidature was really first made known at the meeting of the Council. Although Mr. Wood has not been successful on this occasion, it is well that he has declared his willingness to become a candidate for an examinership at the College. There can be little doubt that if Mr. Wood should again offer himself, he will receive liberal support. Mr. Sydney Jones was, we believe, for the fourth time unsuccessful. We cannot but feel that he has been ill-advised in consenting to be nominated as a candidate as long as Mr. Le Gros Clark represents St. Thomas's Hospital. Everything considered, the election of Mr. Forster will doubtless give general satisfaction, and the Council is to be congratulated on the manner in which they carried at the head of the poll a gentleman who was not of their body. As we stated last week, Mr. Forster has had many years' experience as a teacher of anatomy, and is now the lecturer on surgery at and surgeon to Guy's Hospital, and will doubtless prove himself a good examiner.

At a special meeting of the Council, to be held next Wednesday, Sir James Paget will move for the appointment of a committee to consider and report on the best means of giving effect to the new bye-laws relating to examiners and examinations in anatomy and physiology.

OARSMEN AND SOLDIERS.

THAT the physical effect of out-door athletic exercises is, as a rule, beneficial, is a matter within the scope of everybody's experience and observation; but it has been frequently suggested—by the late Mr. Skey, among others, for example—that the excessive physical and nervous strain and tension present in those who take part in a struggle like that of the University boat-race not uncommonly produce direct or remote injury to health. On the other hand, the author of "University Oars" has taken considerable pains to institute a critical inquiry, and trace out the subsequent medical history of those who have taken part in the annual University boat-races of the past, and he has arrived at results that are not confirmatory of this view. It is a pretty well established fact that when a large number of young immature men are quickly pushed through drills and military exercises, and subjected to the physical exertions incidental to a campaign, many of them suffer from functional derangements of the heart and other affections of the vascular and respiratory organs, so as to incapacitate them temporarily, and sometimes permanently, for military duty. And yet the degree of physical exertion undergone in a given time is probably very much inferior in the case of soldiers recruited, drilled, and sent into the field in time of war, than it is in the case of the men who compose the Oxford and Cambridge crews, whose subsequent medical history proves that they are only very exceptionally injured by their work. In either case the physical strain will test the integrity and strength of a man's organs. Just as the exposure to the keen east winds will find out the weak places in those with a susceptibility to bronchitis, neuralgia, or rheumatism, so will an unwonted degree of physical exertion tell on persons with any constitutional or organic weakness, and accelerate its development. But it is not difficult to discover the reasons for the relative immunity of the young oarsmen from those affections to which the young soldier is so liable. In the first place, the former are the very pick of the universities; they are, and always have been, well fed; their muscular energy and powers of endurance have been already tried and established in anticipation of the race, for which they undergo a very methodical and rigid process of training; their exertions, however great, are not long continued, and their chest movements, as well as those of their limbs, are perfectly free and unconstrained. Our military recruits, especially in times of pressure, are not composed of the pick of the nation, but of the best attainable material; their exertions, if less, have to be much longer sustained, and they have to be executed under certain conditions of mechanical restraint that impede the free circulation of blood and air; and, lastly, the recruit does not generally spring from a class of men who have kept or are likely to keep their bodies in subjection. It is not, therefore, "the pace that kills" in the case of the young soldier, but the continuous daily exertion over long periods of time on the part of men of necessity less carefully selected, less slowly and securely trained by graduated and varied exercises, and by enforced habits of temperance, to discharge a work the performance of which is more or less embarrassed by the weight that has to be carried.

THE HOSPITAL SUNDAY FUND.

DR. MACKENZIE and his friends by this time are probably beginning to realise the difference between public opinion and the disorderly tumult of a packed meeting. The Council of the Hospital Sunday Fund has a claim to represent the contributors to the Hospital Sunday collection to which the meeting at the Mansion House on the 8th could make no pretensions. And the Council has almost unanimously passed a resolution declining to hold itself bound by, or accept otherwise than as recommendations worthy of being considered, the resolutions of any meeting held during its tenure of office. The specialists at the meeting of the 8th made the great mistake of going into questions which were not referred to them nor to the meeting of which they formed the larger and unruly part. The committee appointed, on the motion of Cardinal Manning, at the public meeting of January 4th, was appointed for a specific purpose—viz., to consider the principles on which awards to special hospitals should be made and other awards. But there was nothing in the terms of Cardinal Manning's motion to justify the committee going into the question of the composition of the Distribution Committee. The special committee, in going into such questions, exceeded its powers. And the public meeting to which it reported did the same. Independent of this circumstance, the Council cannot divest itself of responsibility for the distribution of the fund, and if it is to be responsible, it must use its own judgment as to the weight of the representations of any so-called public meeting. There can be no difficulty in deciding that such a meeting as that of the 8th, which Canon Miller described as more absolutely disgraceful in its conduct than any he remembered, could have no weight with a responsible body. Not the least significant point in the rebuke conveyed by the Council to Dr. Mackenzie and his associates is the fact that the resolution making light of what must be called his meeting was moved by Mr. Brudenell Carter, himself a specialist. Though we are not favourable to special hospitals, we are glad to see specialism itself redeemed to some extent, by the action of

Mr. Carter, from the discredit which has accrued to it from the meeting of March 8th. Mr. Carter, it is known, feels dissatisfied with the award to his special hospital; but, as a public man, he can discuss difficult questions with good temper, without offending the clergy who so zealously provide the fund, and the Distribution Committee which tries to distribute it. The proposal of Dr. Kennedy for the Council to have a conference with the contributing ministers of religion, accompanied by two laymen of their respective congregations, is rather unreasonable, because it is uncalled for, and delays the transaction of the business of the Council. But we cannot altogether blame the ministers for wishing to be their own spokesmen after the way in which they were misrepresented on the 8th of March.

We cannot conclude without expressing regret that Sir James Paget should have thought it necessary, in consequence of the resolutions of the meeting of the 8th, to withdraw from the Council. Surely this is making too much of the meeting of the 8th. We venture to hope that Sir James will reconsider his decision, and continue to give his support to the Council and to this great cause. The meeting of the 8th only makes it more binding on all persons of influence to raise this cause out of the region of party feeling, and establish it on great general principles.

THE BIRMINGHAM MEDICAL INSTITUTE.

THE disputes and contentions about the admission of professed homœopaths to membership of the Birmingham Medical Institute appear to be as hot as ever. Many of the medical men of Birmingham, and nearly all the local daily papers, seem to have declared for the homœopaths. But Mr. O. Pemberton has firmly held out, and has thereby brought on himself much unmerited abuse. Nor have we escaped. Charges of unfairness, ignorance, and bigotry have by one person or another been freely laid against us, and all because we have maintained that as, by all the rules of etiquette and ethics, we are forbidden to have professional dealings with professed homœopaths, we are by the same rules compelled to oppose the admission of such persons as members of the Medical Institute. The subject is a simple one. Either homœopathic practitioners should be recognised as practitioners of legitimate medicine, and treated accordingly, or they should be allowed to hold the same relations to ordinary practitioners that they have hitherto held, and excluded, not only from professional consultations, but also from professional associations and corporations.

We approve entirely of the measures that have been taken by Mr. Pemberton to ascertain the opinion of the medical practitioners of the Midland district. A copy of the Memorandum of Association of the Medical Institute, and of the correspondence which has lately appeared in THE LANCET, together with the editorial articles, has been sent to fourteen hundred medical men within fifty miles of Birmingham. The following declaration, to which replies are requested, is enclosed with the circular:—

"Having considered the objects contemplated in the foundation of the Birmingham Medical Institute, I, the undersigned, am of opinion that all those practising as professed homœopaths, however legally qualified, should not be elected members so long as they assume a mode of *practice*, and maintain a *name*, calculated to mark them from the general body of the profession."

Mr. Pemberton has, in the wording of this declaration, exactly hit the mark. The whole dispute turns upon the assumption by the homœopaths of a name that is "calculated to mark them from the general body of the profession." The question is, as we have already stated, one of professional ethics. Homœopaths adhere to the name, although they have been compelled to acknowledge that the doctrines comprised under it are not only not of universal application, but that "there are some cases of disease which do not admit of homœopathic treatment, and other cases where it is necessary to produce certain effects which could not be obtained from either large or small doses of homœopathic remedies." By this confession of one of the acknowledged heads of homœopathy in this country, the matter is made exceedingly simple. The retention of the name of homœopath is unjustifiable and misleading, and until this appellation is discontinued the homœopaths must not be surprised if ordinary medical practitioners refuse to hold any professional relations with them. Unless therefore this name be renounced, we trust that all the medical men of Birmingham and the neighbourhood will strengthen Mr. Pemberton's hands, and will not hesitate to express their opinion that those who practise as professed homœopaths should not be elected as members of the institute.

SCIENCE AT CAMBRIDGE.

THE death of Professor Willis has rendered vacant the Jacksonian Professorship, and last Saturday the Vice-Chancellor and Council of the Senate met to consider certain recommendations as to the duties and stipend to be attached to the professorship in future. It was proposed that the Jacksonian professor should be made an *ex officio* member of the Board of Natural Science Studies, and that the next professor's stipend should be raised to £500 per annum. Dr. Latham proposed that in future the professor should lecture on State Medicine and Public Health. The question of public health, he said, was recognised in the country as an important one, and its importance had been recognised by the University in an issue of a public notice stating that there would be an examination in the subjects pertaining to public health next October. This was rather putting the cart before the horse, because it was proposing to examine in what they had given their own students no opportunity of learning. Mr. Jackson's desire was to promote knowledge by which life should be made more tolerable under disease, and Dr. Latham thought that Mr. Jackson's wish would be best carried out by the University furnishing information as to preventive medicine, and matters pertaining to public health, to all who required it. Dr. Humphry and Professor Stokes were in favour of the transference of the professorship to the Natural Science Board. Dr. Humphry thought the professor should treat of natural bodies—animal, vegetable, and mineral,—viewing them alike on the chemical and biological side, more especially in reference to certain diseases. Professor Stokes said that if the professor took up physics and chemistry, and incidentally helped forward therapeutics and agricultural chemistry, he would be keeping to the subject. The professor might not be forbidden to lecture on mechanism. It will be seen that considerable difference of opinion exists as to the manner of utilising the professorship, even after its transference to the Natural Science Board. We regard Dr. Humphry and Professor Stokes's proposal as somewhat indefinite. No one professor could adequately treat on all the subjects named by them. On the other hand, a professor of State medicine would not only supply a definite want in the University, but would become an authority to whom the whole kingdom might look for advice and guidance in all sanitary matters. The subjects to be taught are definite, and also of a highly practical value. We hope Dr. Latham will keep the matter before the members of the Senate, and continue to urge on them the importance of creating such a chair as soon as possible.

THE HAMPSTEAD FEVER HOSPITAL.

THE Hampstead Hospital question is a veritable Antæus. No sooner does it seem to be settled than we hear of it again in some new form, and the agitation, which appeared to have subsided or died out, is revived with renewed energy. The final decision of the Metropolitan Asylums Board seems to have had no effect on the intentions of the Hampstead people, who propose to bring the matter before Parliament. They state confidently, moreover, that Mr. Sclater-Booth will withhold his sanction from any proposal to proceed with the erection of the hospital on the present site. A petition has been prepared, which is being extensively signed, and will no doubt be shortly presented to Parliament. One or two points which are urged by the petitioners are certainly important, especially that the public have neither due notice nor any power of appeal to Parliament in the case of erection of hospitals, such as exists where railway, sewerage, and other works are in question. But we regret to see that they adhere to misstatements, such as that the mortality of cases treated in the hospital during the epidemic was greater than that of those treated in their own homes—a statement the reverse of accurate, and which can only injure their cause. Yet this is not half so serious a misstatement as the astonishing one that recently appeared in a medical paper which has advocated the establishment of the hospital, that the average mortality of small-pox is 37 per cent. In addition to the petition, Mr. Coope, the member for Middlesex, has given notice that on the 9th of April he will call attention to the action of the Asylums Board with reference to the proposed erection of the hospital, and move for a Select Committee to inquire into and report upon the working of Clauses 15 and 16 of the Metropolitan Poor Act (30 Vict., c. 6), with the view of suggesting any necessary alteration. We may add that Sir Rowland Hill, who, as is well known, is the greatest sufferer by the site of the hospital, but who has been prevented by age and infirmity from taking any active part in the agitation against its erection, has issued a "personal statement" to members of both Houses of Parliament, in which he makes a touching appeal on the ground of the injury he has suffered, both to his health and property, from the close neighbourhood of the hospital. If it were only for his sake, and on the ground of his services to the country, we trust that the matter will receive a full and impartial investigation at the hands of the Select Committee, which we doubt not will be appointed, and that he will at least receive some compensation if the injury to be inflicted is inevitable.

THE BRITISH MEDICAL SERVICE.

IF we may judge from the communications that have reached us, some portions of the reply of the War Minister to Mr. Lyon Playfair's questions on Monday night have occasioned no little surprise, while others have awakened criticism. To members of the department it was a matter of surprise to find the authorities opening the door to candidates when none were required. Unaccustomed to such unwonted acts of generosity on their part, they had recourse to the Army Estimates and Army Lists for an explanation, with the result, as will be seen by the communication of a correspondent, of discovering that there was a loss to the Service of twenty-six medical officers during the past year, which should have occasioned a corresponding number of vacancies. It is alleged, moreover, that the Indian Medical Service has invariably, with the single exception in 1873, attracted the best men. When Vote 4 of the Army Estimates comes on for consideration, in about ten days' time, we trust that Mr. Lyon Playfair and other members of the House will return to the discussion of this matter, and press upon Mr. Hardy the absolute necessity that has now been shown to exist for something being done. The amount of discontent in the Department is lamentable, and the authorities have themselves to blame for it, for having broken faith with their officers, and adopted a tinkering policy where a decided one was most of all required, and taken a decided action where they should either have abstained from doing anything or done it in a very different fashion. Compulsory retirement at sixty years of age for the upper ranks, and provision for a limited number of retirements after twenty years' service at a reasonable rate; the adoption of a fixed scale of allowances; the concession of the requisite degree of power to medical officers to manage their own affairs; and, above all, some distinct expression that what was granted to-day was not to be withdrawn to-morrow, are among the main things requiring Mr. Hardy's immediate consideration. After that the Service may be told "to rest and be thankful" with effect; but, so long as candidates are forthcoming, the Government will "rest and be thankful" that nothing need be done.

GYNÆCOLOGY AND OBSTETRICS AT THE HUNTERIAN SOCIETY.

DR. GERVIS'S Annual Oration at the Hunterian Society, worthily published at the request of the Council, gives a good idea of the progress made in the above department of medicine. It is gratifying to find that English names figure so conspicuously in the history. A great point of course is the success of ovariotomy, shadowed forth in the prophetic words of Hunter:—"I cannot see any reason why, when the disease can be ascertained in an early stage, we should not make an opening into the abdomen, and extract the cyst. Why should not a woman suffer spaying without danger as well as other animals do? The merely making an opening into the abdomen would never be followed by death in consequence of it." On the point of diagnosis, the orator said, speaking under authority, that ten cases are on an average annually sent to a special hospital for ovariotomy which prove to be cases of pregnancy. He thinks it probable that patients with subperitoneal uterine fibroid will, at no very distant time, not be allowed to die without the possibility of removal by abdominal incision being considered. In the domain of obstetrics, Dr. Gervis dwells with satisfaction on the injection of perchloride of iron treatment of post-partum hæmorrhage, introduced by Dr. Barnes, and the perfecting of the bimanual method of version, for which we are indebted to Dr. Hicks. He is obliged to admit that we are yet ignorant of what constitutes the essence of puerperal fever, but speaks with praise of disinfecting intra-uterine injections, corroborating the words of Dr. Marion Sims:—"I have often seen the pulse fall eight or ten beats in the minute, and the temperature one degree, within ten minutes of washing out the cavity of the uterus."

THE HISTORY OF MEDICINE.

"LES grandes traditions de la médecine," said the distinguished surgeon Malgaigne, "sont, je ne veux pas dire perdues, mais tout au moins interrompues"; and there is no doubt that from want of a well-classified and well-described library of medical writers, the works, so rich in suggestion, of our forefathers in the healing art are practically lost to the present generation. For this reason we welcome with peculiar warmth the "Bibliographie des Sciences Médicales," which has just appeared under the editorship of M. Alphonse Pauly, who has been entrusted with the task of cataloguing the medical works in the "Bibliothèque Nationale" of Paris. Begun by Daremberg in 1859, the work has been five years in preparation, and deals principally with the

extant books and monographs on epidemic disease and medical geography. To this last subject, the first lines of which were laid down by the master-hand of Hippocrates, M. Pauly devotes a chapter which all students of public hygiene would do well to read. A *catalogue raisonnée* of the author's, cited throughout its pages, concludes the work. One valuable feature which was promised in its programme will be missed in the completed publication—the preliminary essay by Daremberg on the History of Medicine. The premature decease of that scholar, who was second to Littré alone in knowledge of medical literature, deprived the world of the dissertation in question, and M. Pauly was left to complete the work singlehanded. Next to Littré, a better substitute for Daremberg could not be found; and M. Pauly, availing himself of the labours of Haller, Choulant, Callisen, and Rozier, has carried out the programme of his predecessor with loyal and loving care. He has not limited his researches to the independent publications of medical literature, but, carrying out the traditions of Daremberg, he has ransacked the "Bibliothèque Nationale" for monographs and theses, and the periodicals of the past, whether treating of medicine or the cognate sciences, to enrich his array of authorities. From these sources he has amassed a fund of information on epidemics, on hospitals, and on public hygiene in civil and military life, which renders the completed work most honourable to our French neighbours, and wins for them the gratitude of all engaged either in private practice or in the great sanitary service.

HOSPITALS FOR ALL CLASSES.

THE suggestive letter which we published last week from Sir Charles Trevelyan is valuable evidence in favour of the scheme we advocated a week or two ago. The writer, however, is in error in supposing that his views differ from our own; in fact, as a careful perusal of our article will show, the plan he suggests is exactly that which we proposed. It may be interesting to our readers to know that a new hospital is about to be built at Montreal, Canada, on some such system as that which commended itself to us. The following extracts from a letter on the subject by a gentleman who has engaged to find means for the building of the "pay" wing will give an idea of the scheme. He writes:—

"The pay-patients' wing in connexion with the Western Hospital of Montreal will consist of one of four pavilion buildings, arranged on the same principle as those of St. Thomas's Hospital, but of inexpensive construction in comparison. As projected, it will be about 120 ft. long by 45 ft. wide, with two wings at the end for closets and baths, and three storeys high, exclusive of basement. A Mansard roof finished will form the third storey. The interior will be arranged after the plan of an hotel wing; a wide passage through the centre giving light and ventilation, with rooms for patients on either side. The rooms on the ground floor will be spacious and well furnished, and two or three of them can be used *en suite*, or arranged as private parlours if required. The charge to patients per diem will be about 12*s.* for single rooms, and if with parlour 20*s.*

"The second storey will be divided into rooms of about 15 ft. by 11 or 12 ft.; and a parlour and reading rooms neatly furnished. The charge for second-floor accommodation would be about 8*s.* or 10*s.* a day.

"The third or upper storey would consist entirely of bedrooms of the same dimensions as the second storey, but more plainly furnished. The charge per diem would not be lower than 5*s.* or 6*s.*

"The charge for a day includes food, attendance, light, medicine, and the attendance of the house-surgeon if desired by the patient; but the patient may employ at his own expense any regular practitioner.

"The object of the pay patients' wing is to provide for the large section of our population living in hotel and boarding-houses who, if sick, cannot obtain nurses and be properly treated except at a large outlay; and in many instances are unable to find accommodation, and have been obliged to enter the public wards, though willing to pay liberally for private attendance. Provision for the indigent is generally ample, while the pressing claims of a numerous class, equally deserving of attention, have been practically disregarded in most countries. We hope to make our pay wing a source of revenue, and expect a surplus sufficient to cover the expense of maintenance and treatment of a number of indigent patients equal to the number of pay patients, or, in other words, that each pay patient will provide for the treatment of one indigent.

"The scale of charges will be regulated by the accommodation; the food and attendance will be uniform to all patients. We intend to provide a better class of nurses for the pay wing, by instituting promotion from the indigent wings; the result will be beneficial both in the pay and the indigent wards. Our hospital will be on a comparatively small scale, and if successful will be enlarged."

The scheme seems to us one well worthy of imitation in whole or part, and we do not see why each general hospital should not introduce its "pay wing." The prices to be charged appear to us rather high, but it must be remembered that everything is proportionally dearer in Montreal than in London. But at any rate the plan is well worth trying.

DIPHTHERIA AT WOOLWICH.

WE do not regard Mr. Hardy's reply to Mr. Sheriff's question on this subject as altogether satisfactory. It appears that in consequence of the occurrence of a fresh outbreak of diphtheria in the huts on Woolwich Common, the Army Sanitary Commission had again visited the place, and reported so unfavourably that all attempts to improve these fever dens are to be abandoned. This means, we hope, that the huts are to be destroyed. Meanwhile arrangements are to be made to remove the 49th and 50th brigade depôts to Warley barracks till they can be accommodated at Hounslow, so that these unfortunate families will be removed out of the danger to which they have been exposed at Woolwich. In addition to this step, which we think has been unduly delayed till Parliamentary inquiries had forced it upon the Government, we had hoped that some promise would have been made and steps taken to prevent for the future the system of overcrowding so commonly practised in the quarters allotted to married soldiers in barracks. We have frequently drawn attention to the sanitary and social evils attending this plan of herding adults and grown-up children together in one common sleeping and living room, and we ought not to wait for another epidemic to enforce on us the necessity of providing better accommodation for our married soldiers.

PSYCHOLOGY OF "REVIVALS."

THE points of contact between religion and medicine vary according to the side from which their relation is regarded. Viewed from the side of religion, they are many and various, as our medical missionary societies testify. Looked at, however, from a medical point of view, they touch only at one or two almost isolated places.

Emotion is the motive power on which, for the most part, our religious leaders have relied to stir men's minds, to effect what is termed, with more or less justice, their conversion. To effect this much force is needed, and in those whose minds are in a condition of unstable equilibrium the resulting perturbation is sufficient to disturb the normal balance of thought and feeling, and start a series of consequences which may result in pronounced insanity. That this is a frequent occurrence may be doubted. Religious delusions are common enough in the insane, but that probably arises from that region of thought and feel-

ing presenting the most unobstructed field for excessive action.

It is in periods of "revivals," when religious emotion is stirred in disproportionate degree, that the danger of such results is greatest, and this aspect of a movement so extensive as that now commenced in London comes fairly within the range of the physician's consideration. Judging, however, from personal observation, we should say that no movement of its extent could well present less danger of excessive or perverted emotional effects than that of Messrs. Moody and Sankey. The testimony of most unprejudiced observers is to the same effect. The services are singularly free from the more objectionable elements of "revival" meetings. Sympathetic, but not overwrought music, and shrewd, rough aptness, sometimes humour, of the sermon are the characteristics which mark the services from most ordinary preaching of the same theological school; and there is nothing to point to artificial stimulation of the emotions more than necessarily attends extempore worship and earnest preaching in a large concourse.

PROFESSIONAL SECRETS.

ALTHOUGH it has been decided again and again that in a court of law a medical man is bound to divulge any secret which may have been confided to him, we still continue to find reports of cases in which objections have been raised by the witness and overruled by the judge. In a recent case tried in the Court for Divorce and Matrimonial Causes the chief evidence of the adultery of one of the parties was contained in a confidential letter written to a medical man who was called as a witness. The witness very properly hesitated before committing what was apparently a breach of confidence, but the judge informed him that, although he respected the feeling which prompted his unwillingness to reply, the witness was nevertheless bound to do so. We think witnesses do wisely, when called upon to perform so unpleasant a task as the divulging of that which has come within their knowledge in the course of professional business, to take care that it shall be made evident that they do so unwillingly, and only because they have no choice. We should always advise a medical witness to raise an objection, although it is certain that such objection will be overruled. In this way he will clear his character with the public, who would naturally regard with anger any undue readiness to reveal what had been communicated in the course of consultation.

The law on this point in France differs somewhat, we believe, from that of England. The Penal Code, as quoted by Beck, decides that if any persons, depositories of secrets, either through their condition or profession, shall reveal these secrets (except in cases where the law obliges them), they shall be punished with fine and imprisonment. It is expressly indicated that the exception has reference to crimes that *put the safety of the State at hazard*. In a divorce case, therefore, which does not imperil the safety of the State, a witness would not be called upon to divulge professional secrets.

THE HOSPITAL SATURDAY DISTRIBUTION.

THE distribution of the Hospital Saturday Fund may be intelligible to accountants, but to humbler mortals it must remain more or less shrouded in mystery. It is based on a system of elaborate calculations: of patients relieved, of cost per bed, first as regards maintenance, second as regards management; of the cost of out-patients per head, as regards, first, maintenance, second, management; of economy; of "general questions," which can never be fathomed by the public. As regards all this detail, we confess to thinking it not only pretentious, but essentially fallacious. What data, for example, can be relied on to entitle an accountant to differentiate in the expenditure of hospitals the sum spent by each hospital on the "maintenance and management" of out-patients from that spent on the maintenance and management of in-patients? There is no such differentiation in the reports, nor is it, we believe, possible to found it on the reports. There is, too, a certain glibness of opinion and comment on the part of the Distribution Committee corresponding with this cut-and-dried table of figures. For example, a heavy expenditure has to be explained at the Seamen's Hospital, and it is "naturally accounted for" by saying that the patients having been, previous to admission, accustomed to ardent spirits, the amount expended thereon is great—£579 18*s.* 6*d.*,—whilst only £368 16*s.* 8*d.* is expended on drugs. We are not quite sure that sailors are fairly chargeable with using so much spirit and so little physic in ordinary as to justify this ready explanation of these figures. A great feature of this distribution is more intelligible, but not less open to criticism—namely, that of the whole sum to be divided (£4498 11*s.* 4*d.*), two-thirds have been given to hospitals and one-third to dispensaries. The dispensaries are, of course, delighted, and Hospital Saturday, speaking generally, stands rather well with those institutions that were somewhat dissatisfied with the distribution of Hospital Sunday. We shall not be suspected of any disposition to disparage dispensaries, but we must say there is no justification, whether we regard their nature or their wants, for giving them so large a proportion as one-third of such a fund as the Hospital Saturday Fund. The Hospital Sunday Council has given them one-tenth, and this yields them, as a class, at least £1000 a year more than they have been in the habit of receiving.

UNIVERSITY COLLEGE HOSPITAL.

ON Tuesday last, the anniversary festival in connexion with this institution was held in Willis's Rooms, under the presidency of Lord Houghton. In proposing the toast, "Prosperity to the Hospital," his lordship made some appropriate remarks on medical charities. Hospitals, he said, serve a double purpose. From them the poor receive gratuitous medical aid, and in them opportunities are afforded for the practice of medicine and surgery. Much had been written and said against hospitals, and statistics had been drawn up with the purpose of showing that they are not so perfect as is sometimes imagined. But we must not compare the treatment of patients in hospital with that of persons under the best conditions in private practice, but with the treatment of persons under the worst conditions; and if this were done it would be found that the cures effected in hospitals are much greater than those which take place under the more common conditions.

EPITHELIOMA OF THE FOOT IN A SUBJECT AFFECTED WITH PSORIASIS.

AT the meeting of the Société Anatomique on Nov. 20th, 1874 (*Progrès Médicale*, March 6th), M. Pozzi exhibited a specimen of epithelioma of the foot removed from a man forty-five years of age, who for twenty-five years had been the subject of general psoriasis. There was marked ungual psoriasis and hypertrophy of the dermis subjacent to the nails, but no patches on the foot proper. The epithelioma had gradually arisen in the site of a small excoriation inflicted twenty years previously. M. Pozzi remarked that cutaneous psoriasis had not yet been shown to predispose to cancer, while that of the mucous membranes, especially buccal psoriasis, was frequently followed by epithelioma. M. Debove thought that the association of the two affections was merely a coincidence. No case of epithelioma had yet

been discovered among the hundreds of cases of psoriasis seen annually at the St. Louis Hospital. Further, psoriasis of the tongue is not a true psoriasis, and very rarely occurs with the cutaneous eruption. Certain skin affections might lead to the formation of cancer by their leaving cicatrices to form its starting point; but psoriasis, however long-standing, never left any trace behind. He thought that the ulceration of the foot was the immediate cause of the epithelioma.

THE PATHOLOGICAL SOCIETY AND "SECRET PREPARATIONS."

THE refusal of a member of the Pathological Society to divulge the methods of preparation of some specimens exhibited by him at a recent meeting, has met with a fitting rebuke from the Council of that Society. On Tuesday last, at the meeting of the Council held before the hour of the ordinary meeting, the following resolution was carried:—

"That, inasmuch as it is contrary to propriety and opposed to the advancement of science that secrecy should be observed with regard to the mode of preparation of any specimen brought before this Society, the Council resolve that Dr. Hoggan's communications on 'Melanotic Sarcoma in the Cod,' and 'Specimens from a Case of General Cancer,' which were illustrated by specimens, the mode of preparation of which he declined to explain to the Society, be not admitted into the Transactions."

We venture to think that the loss to the Transactions that will arise from the adoption of this resolution is one that will not be much felt, nor do we believe that the want of the "new method" will greatly retard the progress of histology. But we are sure that the action taken by the Council will be generally approved; for the matter, though singularly insignificant, involves a great principle.

THE LATE SIR RANALD MARTIN, C.B.

WE are glad to understand that it is proposed to hold a meeting on Thursday, the 25th inst., at 4 P.M., at Willis's Rooms, to consider the subject of a memorial to Sir Ranald Martin. Sir Galbraith Logan has consented to take the chair on the occasion. The late Sir Ranald Martin was ever ready during a long life to advance the interests of the profession of which he was so distinguished a member, and he especially lent his influence and aid in the cause of the profession in the public services. It has been suggested that the memorial should appropriately take the form of some kind of prize in connexion with the Army Medical School at Netley, of the Senate of which school Sir Ranald was a member.

THE PHYSIOLOGICAL ACTION OF COMPRESSED AIR ON ARTERIAL PRESSURE.

DRS. DROSDOFF and Botschetschkaroff have recently made some experiments on the physiological action of compressed air on blood-pressure. The animals were narcotised with opium, and a tube fixed in the trachea, through which they breathed, at the pleasure of the operator, either atmospheric air or air compressed by means of Waldenburgh's apparatus. They found that the blood-pressure fell immediately the animal breathed the compressed air, but rose as soon as this was exchanged for ordinary air. Coincidently with the fall of the arterial blood-pressure oscillations of that pressure dependent on inspiration and expiration became much more marked, being, in fact, two or three times higher and longer than in ordinary respiration. After section of both vagi, instead of exaltation as under ordinary circumstances, depression of pressure took place when the animal was made to breathe the compressed air. When the connecting tube was removed and the animal allowed to breathe ordinary air, the pressure quickly rose, and Traube's curves appeared. The number of the cardiac beats after section of the vagi and the respiration of the compressed air underwent but little change. The physiological effect of irritating the peripheric extremity of the vagus during respiration of the compressed air was even slighter than when ordinary air was respired. Irritation of the central stump of the divided sciatic during the respiration of the compressed air was unattended by any remarkable phenomena. On bleeding the animal to death whilst the compressed air was respired, no convulsions occurred.

MISS WOODS, THE SHAKER.

THE sending of this unfortunate lady to a lunatic asylum while her equally insane companions are allowed to roam at large, seems, not unnaturally, to have excited in the minds of the populace an indistinct notion of injustice and oppression. Miss Woods is not possessed of any property, and therefore the placing her under restraint cannot be attributed to any mercenary motives on the part of her friends. As to her unsoundness of mind there can be no mistake, her delusions being of such a character as to leave no doubt as to their insane origin. She believes that she has passed through death, and that God has said she will never die. She sees spirits, and frequently hears the voice of the Almighty addressing her; has several times seen the Saviour in human form, and believes that on one occasion the Holy Ghost descended upon her bed in the shape of three white doves.

As long, however, as her insanity showed itself only in delusions like these, and as long as her conduct was harmless to herself and others, her friends did not think it necessary to interfere, but when they found her thinly clad, sleeping in bitterly cold weather in a tent partially open to the sky, they naturally thought that her life was imperilled, and most properly took the only steps which were open to them. They accordingly had her insanity certified, and placed her in the Laverstock Asylum. Some informality in the certificate necessitated her release. We believe that this has been rectified, and that this unhappy lady is now where alone she could have any chance of regaining her health.

ENTERIC FEVER AT LEWES.

WE regret to announce the occurrence of a fresh outbreak of enteric fever at Lewes, in consequence of which the Lord Chief Justice has announced that the Sussex Assizes would only be opened at Lewes, and then be at once adjourned to Brighton. We are not surprised to learn that fresh cases have appeared; the poison must have been widely disseminated during the recent epidemic, and for some time to come the inhabitants must not consider themselves free from danger. We would urge on the sanitary authority the necessity of carrying out Dr. Thorne's recommendations in every particular, and, above all, of seeing that the wells and cesspools are closed. The poison having once found its way into the town, it will haunt these places for a considerable time. The removal of the assizes will seriously affect the trade of Lewes, and we sincerely sympathise with the inhabitants in their misfortunes, as the sanitary defects which led to the extension of the disease were in this instance the result of ignorance, and not of wilful neglect. But the lesson is a valuable one, and will teach other corporations who have had timely warning that the prosperity of the towns over which they preside may be seriously affected by their neglect. It would be equally easy for the Vice-Chancellor of either University to send the undergraduates down for one or more terms, in the event of an epidemic occurring, as it has been for the Lord Chief Justice

to remove the assizes to Brighton in the present case. The loss to the Oxford or Cambridge tradesmen in such a case would be incalculable.

PHOSPHORESCENCE OF MARINE ANIMALS.

AT a recent meeting of the Académie des Sciences (Jan. 25th) M. de Quatrefages, *apropos* of a work by M. Panceri, of Naples, on the Light emanating from the Nerves of the Elytræ of the Polynoe, made some observations on the phosphorescence of different marine invertebrata. M. Panceri, in his work, had cited various facts tending to show that certain terminal nerve-cells are the seat of the emission of light. In his studies on the phosphorescence observed in certain annelids in ophiuridæ and in noctilucæ, M. de Quatrefages has satisfied himself that the production of light occurs in the *muscles* whenever they contract. As M. Panceri has demonstrated the emission of light in organs totally destitute of muscles, and which, he thinks, are attributable to the nerves, M. Quatrefages suggests that in the cases he observed the light may also be due to the excitation of nervous structures.

THE DISCUSSION AT THE PATHOLOGICAL SOCIETY.

WE publish to-day the outline of the address with which the forthcoming discussion at the Pathological Society is to be opened by Dr. Bastian. The outline will enable our readers to understand more clearly the points to be raised for debate. We propose to make some fuller comment on them next week. We regret to hear that Prof. Lister will be unable to be present at either of the meetings, on account of absence on the Continent. It seems very desirable that all views should be represented, and a list of speakers on the subject in which Prof. Lister's name is not included will be very incomplete. Although the arguments may be in the main theoretical, the debate cannot fail to be of importance in its bearings on practical work in the future.

THE state of the public health in Ireland during the past quarter is officially reported to have been far from satisfactory. The excess of mortality was mainly due to the prevalence and fatality of scarlet fever, no less than 1427 deaths having been registered from that cause. It is instructive to learn that one local registrar attributes the outbreak of the fever to contagion brought from a distant "wake." This statement should induce sanitary authorities in the country to do all in their power to repress the indecent and dangerous practice of "waking" a corpse. Diphtheria, whooping-cough, and small-pox numbered many victims. The spread of the latter disease is reported to depend more or less on inoculation. Many of the districts appear to be in a deplorable state of overcrowding and destitution.

MR. FRANK BOLTON, water examiner, in a report published this month, urges householders to give greater attention to their cisterns. These should be frequently cleaned out, more especially after periods of flood and turbidity. Every care should be taken to prevent contamination of water by the gases generated from sewage, which are liable to flow back into the cistern and become absorbed, unless the overflow pipe is brought outside the house, with its end exposed to the air.

ON April 9th Mr. Cross will call the attention of the House of Commons to the action of the Metropolitan Asylums Board with reference to the proposed erection of a hospital for contagious diseases at Hampstead, and will move for a Select Committee thereon.

THE death-rate in Bradford still maintains its high figure. The increased mortality is attributable, in the opinion of the medical officer of health for the town, to the severity of the weather and the continued prevalence of scarlet fever. There is considerable opposition, even among the educated classes of the district, to the wholesome measures of isolation and disinfection in the treatment of this disease. The sanitary authorities appear to be doing everything in their power to stamp out the epidemic, but their efforts are not supported by private individuals.

SOME time ago we commented on the outbreak of enteric fever in Wakefield Prison, one of the largest institutions of its kind in the country. An investigation was made into the state of the water service, and the medical officer of the prison reported to the magistrates that certain defects should be remedied without delay. Since that time several deaths have occurred from undoubted typhoid fever. We would call the attention of the superior authorities in London to the condition of Wakefield Prison.

A SEVERE epidemic of enteric fever now prevails in St. Petersburg, chiefly among the lowest strata of the population. It has been found necessary to supplement the usually available hospital accommodation with temporary structures for the reception of typhoid patients. Considering the extremely defective condition of the sewerage and drainage of the city, and the vast amount of overcrowding to be found in most of the poorer districts, an early remission of the outbreak cannot be hoped for.

WE are glad to observe that the attention of Government has been called to the employment of young children at public entertainments in a manner dangerous to their lives. Although no complaints on the subject have been brought under the notice of the Home Office for some time, anyone who occasionally visits places of amusement in the metropolis cannot fail to be convinced of the reality of the evil.

MR. W. H. FOLKER, medical officer of health for Hanley, states in a letter to a local paper that for months past the town has been in a most filthy and disgraceful state. Nuisances abound on every hand, while road and pavement cleaning seems to have fallen into desuetude. After this statement it is not surprising to learn that several cases of enteric fever have recently occurred in the town.

Mr. B. FLEMING, the Local Government Board inspector appointed to investigate the circumstances attending the death, in Clayton Workhouse, of Mary Rushworth, a young woman mentally affected, having brought his inquiry to a close, has given it as his opinion that such cases as that of the deceased should be sent to an asylum for treatment, and not to the workhouse.

WE learn by a letter from Rome that the unflagging current of deputations and visitors to which Garibaldi is subjected begins to tell on the liberator's health. The fiery ordeal of "interviewing" has to be gone through every hour in the day.

WE are glad to learn that the important subject of the opium trade will shortly receive some attention in Parliament.

DR. ALFRED MEADOWS has been elected a corresponding member of the Medical Society of St. Petersburg.

PROFESSOR BUFALINI, the most eminent physician in Italy, is now dying.

INDIAN SANITARY REPORTS FOR 1873.*

THE Annual Reports from India, especially those from Dr. Cuningham and Dr. Cornish (of Madras), are always documents of great value. Dr. Cuningham's present Report, which we have now before us, is not likely to give rise to so much discussion as that for last year, when he boldly ran a tilt against all prevalent views of the spread of cholera; but it is, we think, a far more useful and practical document. The author's peculiar opinions or want of opinions on cholera are indeed reasserted, but the bulk of the Report is occupied with other matters, to which we shall turn on the present occasion.

Dr. Cuningham gives a careful analysis of Dr. Bryden's valuable statistics of the European army in India. In 1873 the mortality of that army sank to the lowest figure it has ever yet reached—viz., 15·3 deaths per 1000 of strength, or not more than occurred in England thirty years ago. In the Bombay Presidency, indeed, the Europeans only lost 11·72 per 1000, while in Madras the numbers were 18·29 per 1000, and in Bengal the mortality was almost exactly midway between the two, or 15·3 per 1000. The low mortality was owing in a large degree to the absence of cholera, which was little seen in 1873; but it was also attributable to a diminution of the ordinary causes of death, and, in Bengal and Bombay especially, to a very light dysenteric mortality. These statistics seem, indeed, rather to bear out the view which has been urged by Dr. F. Mouat, that the insurance risks of European lives in India are now higher than they should be—an opinion also strengthened by some statistics of the mortality in the Madras civil and medical services and in the Madras staff corps given by Dr. Cornish in his last Annual Report for Madras.

Dr. Cuningham contrasts the causes of mortality in the three Presidencies. Madras is distinguished by the great mortality ratio of hepatitis and dysentery, and it is clear that a renewed investigation into the distribution and the causes of those two great diseases in that presidency is imperatively called for. In Bengal and Bombay, on the other hand, enteric fever is twice as prevalent as in Madras; in Bengal, indeed, enteric fever takes the second place in the death-list, giving no less than 1·53 deaths per 1000 of strength, while hepatitis, the most fatal disease, gives only 1·8. It is most undoubted that with active sanitation an immense effect must be yet produced upon these death-lists, and that we are only at the threshold of reduction. It is remarkable either that enteric fever is far more fatal than at home, or, what is more probable, that many cases are only diagnosed after death. In 1873 the mortality of enteric fever in Bombay is given as 82·35 per cent. of cases.

Turning to the Bengal stations, we find the mortality of the hill stations to be very favourable. In 1873 there were 7634 men of the Bengal European Army on the hills during seven or eight months of the year, and they had a mortality per annum of only 9·88 per 1000, or the same as at home. At the hill-station of Chuchrata, indeed, the mortality was only 7·29, or lower than in England. How long yet is it to be before all the troops are on the hills, except in the few indispensable military stations on the plains? It is said that the Commander-in-Chief in India is anxious to carry out this transfer to the hills; whence then, or from whom, comes the objection which is yearly causing so much sickness and death? Of the stations in the other presidencies, Madras itself figures with the low mortality of 7·49, Bangalore has only 8·30, and Belgaum presents the wonderful return of a yearly death-rate of only 2·82 in every 1000 men.

Turning from the station statistics to the mortality of the new-comers, we find that the mortality of those regiments which arrived in India in 1873 was 22·14 per 1000; and out of a total of 102 deaths (among 4608 men) no less than 38 were from enteric fever. Hepatitis and apoplexy were also more fatal among these new-comers than in the army generally.

We must, however, turn from this interesting Report to its appendices. These contain (1) Microscopical and Physiological Researches into the Nature of the Agent or Agents producing Cholera, by Drs. Lewis and D. D. Cuningham; (2) a Report on Nematode Hæmatozoa, by Dr. Lewis, which we have already noticed; and (3) Microscopical Notes on the Fungi present in Opium Blight, by Dr. D. D. Cunningham—a paper of great value, which we strongly recommend to the attention of botanists as well as of physicians.

We propose to devote the remainder of our space to a summary of the first of these reports—viz., that on the search after the cause of cholera. Drs. Lewis and Cuningham have now been engaged for some years under the orders of the Indian Government in this cholera inquiry as well as in other incidental matters requiring microscopical investigation. Their researches have been rewarded by singular discoveries—such as the Hæmatozoon by Lewis, and the Opium-blight Fungus by Cunningham. But they have not yet been fortunate enough to reach their grand quest—the nature of the cholera agent. What they have done in this way has been chiefly negative; but even in this respect it is of great value.

It may now be concluded that, investigated by such powers as Ross's one-twelfth and Powell and Lealand's one-twenty-fifth, no foreign body of any kind, animal, vegetable, or mineral, can be invariably detected in the blood or the dejections of cholera. Foreign bodies may accidentally be in a specimen, but they are clearly non-essential, and, in fact, there is remarkable freedom from them. The existence of fungi or bacteria, or other minute forms of life, is excluded with certainty as far as the above microscopic powers extend. That is the first point, and it seems quite clear.

The second point is not quite so clear: the choleraic blood presents a phenomenon which is unexampled, as far as its extent goes, in the blood in health or in any other disease; but it does not appear to be absolutely peculiar to cholera, being seen to a small extent in some other cases. The condition of the blood is one of considerable leucocytosis; the white corpuscles are also in unusual activity, moving and changing in form with a swarming movement of their contents; the red corpuscles aggregate in irregular masses instead of forming rouleaux; and when any pressure is exerted the corpuscles are easily altered in form or drawn out into irregular processes; there is, as it seems, a sort of diffluence of the red corpuscles.

Unable now to find any foreign body to which the phenomena of cholera could be referred in the blood or in the organs, the observers have fallen back on experiments. The present Report contains additional observations on two sets of experiments which they have given in their previous Reports. They have largely injected choleraic and other organic fluids into the veins of dogs. When strained alvine choleraic discharges were used, thirty-four out of seventy-six dogs (or 44·7 per cent.) were affected with violent toxic symptoms. It was a remarkable fact that when the choleraic material had been boiled, more dogs were affected than when it had not been boiled; also it appears that when the choleraic discharges were putrid the toxic effect was much less marked. Out of eight animals, only one was affected, and in that case the material had been heated to 212° a few minutes before being used. The toxic symptoms consisted of violent vomiting and purging, with intense hæmorrhagic gastro-enteritis, as shown after death.

Precisely similar symptoms were, however, produced by normal alvine solutions injected into the veins of dogs, only it appears that remarkably fewer dogs were affected. Thus eight dogs into whose veins fresh and non-heated alvine solutions were injected gave one toxic case; in nine dogs in which the material had been heated to 212° two dogs were affected, and in four in which the material was putrid one was affected. Whereas, in fifteen dogs injected with unheated fresh choleraic discharges seven were affected, and in thirteen treated with choleraic discharge previously heated seven were affected;

* Tenth Annual Report of the Sanitary Commissioner (Dr. J. M. Cuningham) with the Government of India, for 1873. Calcutta, 1874.

or, taking both series, 50 per cent. were poisoned. This appears to us a very important fact; it seems to show that the choleraic discharges possess, in a much higher degree than healthy alvine discharges, the power of exerting a violent action on the alimentary mucous membrane. And also this is evidently not mere putridity of the fluids, for the discharges were fresh, and when allowed to become putrid the toxic action was less marked.

The second experimental inquiry was a repetition of the experiments on the mesenteric and splanchnic nerves, which lead to the same result as before—viz., that section of the mesenteric nerves led almost invariably to copious secretion of fluid from the mucous membrane of the bowels, independent of any epithelial detachment, while section of the splanchnic nerves had no such effect.

What now are the conclusions we must come to from these observations? Here we must almost leave our authors, for they are so cautious, and so afraid of saying anything which is not absolutely certain, that we have some difficulty occasionally in exactly collecting their views. But we think they deny that the choleraic agent is a living creature of any kind; they cannot find such a creature, and they cannot destroy the toxic properties of the choleraic fluid by a heat of 212°. They therefore seem (if we may read between the lines) to believe that the toxic substance undoubtedly existing in the choleraic discharges is a chemical substance unaltered by a heat of 212°, and from the repetition of the experiments on the nerves we are led to surmise that they suspect this substance acts by paralysing the mesenteric nerves. If we are interpreting too fast or erroneously they must pardon us; our interpretations do not commit them, but it is impossible to go on reading reports for ever without trying to see whither they are leading us.

We trust the Government of India will vigorously push on this cholera investigation, and we would venture to suggest two points for special inquiry—viz., where the blood acquires its leucocytosis, and the red corpuscles their diffluence? is it in the spleen or liver, or in the mesenteric vessels or glands? And, secondly, what would be the effect of trying to dissolve out of the choleraic stools in some way its organic toxic substance (for such, we suppose, must exist), and trying the effect of that when obtained in a purer and more concentrated form? Also, what would be the effect of cold upon this toxic agency, whatever it may be?

Correspondence.

"Audi alteram partem."

CROUP AND DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—In reply to Dr. Moxon and to the very courteous letter of Dr. Wilks, I maintain that the action of such irritants as steam, acid vapours, and a foreign body in the trachea, throws no light on the relation between membranous croup and diphtheria. Dr. Moxon asks my judgment upon the argument that "it is surely to be expected that the simple tracheitis which is severe enough to kill is also severe enough to bring false membrane." Is it not obvious that Dr. Moxon's case, which is a type of a well-known class, negatives this proposition? Why was there no false membrane in that case? Can the severity of a disease be more than mortal, and produce a result *ultra mortem*? If tracheitis from cold may be so severe as to kill without false membrane, is it not reasonable to suppose that a false membrane when it occurs is due, not to the intensity of the inflammation, but to its specific character? Dr. Moxon writes as if this important question were to be decided by *à priori* arguments and theoretical considerations, and not by the careful observation and interpretation of facts.

I will endeavour as briefly as possible to set forth the main facts which bear upon this question. We know from abundant experience that the anatomical result of inflammation of the air-passages excited by cold (laryngitis, tracheitis, bronchitis) is a muco-purulent exudation, and not a fibrinous membrane. We know that the disease which has prevailed for centuries, and to which in these latter days Bretonneau has given the name of diphtheria, is attended with a membranous exudation. As an abraded skin may become the seat of this specific membranous formation, so may a mucous membrane abraded by catarrhal, scarlatinal, or rubeolous inflammation. In other words, diphtheria may occur as a complication of other diseases. We know that in past times writers on croup—notably Drs. Home and Cheyne—confounded laryngo-tracheitis from cold (inflammatory croup) with laryngo-tracheal diphtheria; we also know that modern writers, still under the influence of this erroneous teaching, make an unnatural and perplexing jumble of these two essentially distinct diseases. We ask for some positive proof that simple tracheitis from cold, unassociated with evidence of a specific poison, is ever attended with an exudation of false membrane, and instead of proof we get arguments not plausible that so it ought to be, and illustrations not relevant to the point in dispute.

Dr. Moxon asks Sir William Jenner and myself whether, meeting with a case of sporadic croup, we enforce the same precautions as when a case of sporadic scarlet fever appears in a family. Not "the same" precautions, certainly, but, answering only for myself, if I am called to a case of sporadic *membranous* croup, which I hold to be synonymous with laryngeal diphtheria, I of course isolate the patient, believing that the disease, though much less infectious than scarlet fever, is in a perilous degree infectious, and I cause a most careful search to be made for the insanitary conditions within and around the house, which, in the absence of infection from a previous case, I know must have been the exciting cause of the disease. It surely would not be wise to defer these precautionary measures until, either through personal infection or through a common exposure to the poisonous air from a sewer or a cesspool, one case has been succeeded by others, and has thus ceased to be sporadic.

The fact of a case of croup occurring singly proves nothing as to its nature. Contagious diphtheritic membranous croup *may* be sporadic; non-contagious catarrhal croup much more frequently is so.

A few words on Dr. Monckton's case of "stomatitis from toothache," with submaxillary abscess, and a membrane under the tongue, "without a scintilla of evidence except the membrane that a poison was at work." An important exception certainly; and are we to suppose that the "toothache" was the ultimate fact in the etiology of this disease? To me it seems probable that some inhaled or imbibed poison was the primary cause of all the morbid phenomena. If I met with such a case I should make diligent search for an extraneous source of poisoning, and I should not be content to call it "stomatitis from toothache." Of course I agree with Dr. Monckton that the name of a disease should be unmistakably significant of its nature.

And now, with an apology to Dr. Moxon for my blundering substitute of "English cholera" for "English diarrhœa," and, with thanks to you, Sir, for your liberal allowance of space, I hope that my part in this discussion is for the present at an end.

I am, Sir, your obedient servant,

Savile-row, March 15th, 1875. GEORGE JOHNSON.

To the Editor of THE LANCET.

SIR,—If Dr. Moxon will kindly allow me to comment on his letter of the 9th inst., I would wish to indicate to him that the two cases which he therein describes were not tracheal diphtheria at all, nor did the symptoms during life (so far as they are given) point to that disease. His cases were instances of acute laryngitis, one certainly, the other probably also, due to exposure to the east wind. He seems surprised that there was no false membrane present in the first case, but if he will reflect upon what I and others have written, none was to be expected. I have stated long ago that "the inflammatory disease of the larynx and windpipe, often popularly called croup, but not attended by the formation of a false membrane, is not the croup of Home and Cullen and Bretonneau."

I have further stated, and so has Dr. G. Johnson, that the word "croup," as popularly employed, comprehends two, perhaps three, very distinct diseases—namely (1) pseudo-membranous croup, or, more correctly, laryngo-tracheal

diphtheria; (2) inflammatory croup, or, more correctly, acute laryngo-tracheitis, in which there is no false membrane; and (3) spasmodic croup, or laryngismus stridulus.

Dr. Moxon's cases clearly belong to the second category. He was perfectly right, if he will accept my commendation, in opening the windpipe in both his cases, because tracheotomy is no doubt highly useful in severe cases of acute laryngitis, for that measure allows the entrance of air into the lungs, and gives time for the inflamed larynx to return to a healthy condition. It is indeed far more useful in this disease than in laryngo-tracheal diphtheria, for in the latter there is not only the difficulty of extracting the false membrane, but the further one of contending against the toxæmic condition of the system on which all the forms of diphtheria depend.

I have been fortunate enough, *pendente lite*, in this matter, to meet with a case of fatal laryngo-tracheal diphtheria only last week, and the larynx and trachea and the false membrane are now in my possession, and I shall be most happy to show them to Dr. Moxon. But the symptoms during life, of which I have the notes, were entirely different from those in Dr. Moxon's cases.

I am, Sir, your obedient servant,

Torrington-square, March 15th, 1875. R. H. SEMPLE.

To the Editor of THE LANCET.

SIR,—May I be permitted to say a few words, from a country doctor's point of view, as to the relation between croup and diphtheria. Speaking from my own experience, I should say, with all deference, that "membranous croup" and "diphtheritic tracheitis" are essentially different forms of disease. Diphtheria with us is a somewhat rare disease; croup, meaning the membranous form, comparatively common. The cases of croup I have met with have been isolated, and not traceable to contagion or sanitary defects, as diphtheria, I believe, always can be. Croup I have always found more or less of a sthenic character; diphtheric tracheitis with marked depression. Again, I believe the latter disease to be much more amenable to treatment than the former, and to be the form in which tracheotomy is most successful.

It has struck me, as a possible explanation of the difference of opinion on this subject, that membranous croup is essentially a disease of the country, diphtheritic tracheitis of large towns, and hence the preponderance of *great authorities* in favour of the diphtheritic origin of all forms of membranous croup. At all events, croup is frequently found where diphtheria is quite or almost unknown, and it would be scarcely fair to ascribe all the cases of membranous croup to a diphtheritic source, unless the diphtheritic poison showed itself in some other way also.

I do hope that some other "country doctors" of larger experience than myself will give us their opinions on the matter in dispute, as I believe that these diseases can be more thoroughly studied in the country than in large towns. The doctrine as to the identity of the cause of membranous croup and diphtheritic tracheitis, so strongly supported by Sir W. Jenner and Dr. G Johnson, is no doubt an easy way out of the difficulties which surround this subject; but, with all deference to such eminent authorities, I venture to assert that it is a dangerous error, and one likely to lead to grievous mistakes in practice.

I am, Sir, yours &c.,

Reigate, March 1st, 1875. J. WALTERS, M.B.

To the Editor of THE LANCET.

SIR,—I am glad to see that there are some who dissent from the opinion advanced by Sir W. Jenner and Dr. G. Johnson that membranous croup and diphtheritic croup are one and the same disease.

To the objections urged with so much force by Dr. Moxon in a late number of your journal, I would add another—that membranous croup was familiar to many of us before the disease now recognised as diphtheria was known to us either in its epidemic or sporadic form.

More than thirty years ago I met with cases of croup in which membranous casts of the trachea were found after death or were rejected during life, but I never saw the fauces or nares affected in those cases, nor did I meet with any instance of membranous exudations on the latter parts until after the epidemic of 1855. If these were cases of diphtheritic croup, as Sir W. Jenner suggests, and as Dr. G Johnson insists, is it not remarkable that the disease of that date should have attached itself exclusively to the larynx and trachea, whereas it now invades the fauces and nares more commonly than the former?

It would be an isolated fact in the history of pathology if it could be shown of any disease that it had its habitat for a long series of years in one short mucous tract, and then, by some change of type, invaded all the mucous membranes contiguous to it, as well as others more remote; and it would be a still more curious fact if this new type of disease should be followed by a train of nervous symptoms of a portentous kind and hitherto unknown.

With these considerations before me, I feel that the new views of the pathology of membranous croup require stronger evidence for their support than any that has been yet adduced.

I am, Sir, your obedient servant,

Guildford, March 9th, 1875. HENRY S. TAYLOR.

To the Editor of THE LANCET.

SIR,—A requisite for the satisfactory conduct of the discussion going on in your columns seems to be a definition of the two diseases, croup and diphtheria.

With regard to croup, we are pretty well agreed as to what is to be understood by the term, and one would hesitate to include the effects on the trachea of steam, acid fumes, or foreign bodies, with the zymotic disease, notwithstanding the existence of many close pathological affinities.

Not so with diphtheria. This so-called disease is characterised by a pathognomonic sign—the leather-like pseudo-membranous exudation; and this peculiar morbid product is observed to manifest itself epidemically, to be associated with an endless variety of general symptoms, and to appear on parts of the tegumentary and mucous surfaces under certain conditions. In some instances this sign is associated with symptoms indicative of malignant blood-poisoning; in others of but little or no derangement of the general health. The seasons, too, during which it appears are noted for the extensive prevalence of epidemic diseases generally; zymotic influences abound, producing not only the well-known specific, but also numerous undefined general diseases.

During such a diphtherial epidemic, were a primary croupal case to occur, or were croupal symptoms to supervene by extension of mischief, probably erysipelatous in character, from the region above, we might with propriety accord to either case the name of diphtheria or croup; but it by no means follows that because certain diphtherial cases may be croupal, all croupal cases are to be looked upon as diphtherial.

According to my theory, croup, in common with scarlatinal and other forms of tonsillitis, and, indeed, many other morbid conditions of system, may be complicated with diphtherial manifestations; but, if so, we have no more authority for identifying diphtheria with croup than with scarlatina or many other forms of general disease.

I am, Sir, your obedient servant,

J. WEST WALKER, M.B. Lond., &c.

Spilsby, Lincolnshire, March 16th, 1875.

Medical News.

APOTHECARIES' HALL. — The following gentleman passed his examination in the Science and Practice of Medicine and received a certificate to practise on March 11th:—

Sworder, Horace, Holly House, Luton, Beds.

The following gentleman passed the Primary Professional Examination on the same day:—

Coombe, John Batten, St. Mary's Hospital.

MR. WILLIAM J. CLAPP, M.R.C.S. Eng., of Nantyglo, has been placed on the Commission of the Peace for the Brynmawr Division.

THE International Exhibition of Paris is to take place, this year, from the 10th July to the 15th November; and we find that pharmaceutical preparations will be particularly abundant.

H.R.H. the Duchess of Edinburgh has signified her intention of being present at the concert to be given by the Amateur Orchestral Society on the evening of the 20th inst., at the Royal Albert Hall, in aid of the funds of the Middlesex Hospital.

IN London last week 1847 deaths were registered, including 3 from small-pox, 13 from measles, 38 from scarlet fever, 16 from diphtheria, 55 from whooping-cough, 27 from different forms of fever, 16 from diarrhœa, and 566 referred to diseases of the respiratory organs.

A VIRULENT disease of the lungs, which would appear to have some resemblance to the epidemic that prevailed in America a year or two ago, has, it is stated, broken out among horses at Hull and its neighbourhood. The malady is described as very infectious, and has already committed great ravages.

BEQUESTS &c. TO MEDICAL CHARITIES.—Miss Rebecca Griffiths, of Dudley, bequeathed £1000 each to the Guest Hospital and the Dispensary, both of that town. Mr. W. G. L. Beeforth has presented £250 to the Scarborough Dispensary. The Western Ophthalmic Hospital, Marylebone-road, has received £200 under the will of Miss E. Rose Chambers. The Victoria Hospital for Sick Children, Chelsea, has received £100 from Messrs. Herries and Co., and £50 from Sir Walter R. Farquhar, Bart., in aid of the new hospital fund. Miss Alicia Harvey, of Bridlington Quay, bequeathed £100 each to the York County Hospital and the Royal Northern Sea-bathing Infirmary, Scarborough.

Medical Appointments.

ADAMS, J. D., M.D., has been appointed Medical Officer of Health for the Yeovil Rural Sanitary District: £75 for one year.

BENNETT, C., M.R.C.S.E., has been reappointed Medical Officer for No. 2 District of the Daventry Union.

BERRY, M. W., M.R.C.S.E., L.M., has been appointed Medical Officer to the Flax Mills Friendly Society, Johnstone, vice Wilson, resigned.

BLAKE, J. R., M.A., F.G.S., has been appointed Lecturer on Comparative Anatomy at the Charing-cross Hospital Medical School.

BLUNT, T. P., M.A. F.C.S., has been appointed Public Analyst for Bridgnorth: 21s. per analysis.

BROOKFIELD, J. S., M.D., M.R.C.S.E., has been appointed Medical Officer of Health for the Denby Urban Sanitary District: £5 per annum; acreage 2713; population 1637.

BURNEY, W. C. S., L.R.C.S.I., L.K.Q.C.P.I., has been appointed Assistant Medical Officer and Dispenser to the City of London Union Infirmary, Bow-road.

CALDCLEUGH, J., L.D.S. R.C.S.E., has been appointed Dentist to the Durham County Hospital.

CARMICHAEL, J., M.D., F.R.C.P.E., has been appointed Physician to the Edinburgh New Town Dispensary.

COE, R. W., F.R.C.S.E., has been appointed a Consulting Surgeon to the General Hospital, Bristol, on resigning as Surgeon.

COLLES, W., M.D., F.R.C.S.I., has been appointed Regius Professor of Surgery at Trinity College, Dublin; also Consulting Surgeon to the Sir Patrick Dun's Hospital, Dublin,—both vice Adams, deceased.

CRAIG, R., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer for the Cheetham District of the Prestwich Union, Lancashire, vice Hunstone, resigned.

CUTHBERT, C., M.D., L.R.C.S.Ed., has been appointed Parochial Medical Officer and Public Vaccinator for the South-East District, Edinburgh.

DAVIES, H. L., M.B., C.M., has been appointed Medical Officer for the Whitford No. 1 District and the Workhouse of the Holywell Union, vice J. C. Davies, M.D., deceased.

DE LANDRE, V. R., L.R.C.P.Ed., L.R.C.S.I., has been appointed Consulting and Visiting Physician to the Waterford District Lunatic Asylum, vice Connolly, appointed Resident Medical Superintendent.

FLEMING, W. J., M.B., F.F.P. & S. Glas., has been appointed Surgeon to the Dispensary, Western Infirmary, Glasgow.

HAMILTON, J., F.R.C.S.I., has been appointed Surgeon to the Queen in Ireland, vice Adams, deceased.

HAMMOND, W., M.D., L.R.C.S.Ed., has been appointed Parochial Medical Officer and Public Vaccinator for the North-West District, Edinburgh.

HAUGHEY, A. E., M.D., M.R.C.S.E., has been appointed Medical Officer for the Crewe District of the Nantwich Union, Cheshire.

HILL, J. W., L.R.C.P., M.R.C.S., L.S.A., has been appointed Surgeon to the Western District of the Chelsea, Brompton, and Belgrave Dispensary.

HOGAN, Dr. E. M. A., has been appointed Medical Officer and Public Vaccinator for the Clane and Timahoe North Dispensary District of the Naas Union, Co. Kildare, vice Smyth, resigned.

HUNT, A. D., M.R.C.S.E., has been appointed Medical Officer for the Chagford District of the Okehampton Union, Devon.

INGLIS, T., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Assistant-Physician to the Royal Edinburgh Asylum, Morningside, vice Newington, resigned.

JEPSON, E., M.R.C.S.E., has been appointed a Surgeon to the Durham County Hospital.

JOHNSTON, J., M.B., C.M., L.M., has been appointed Resident Medical Officer to the Birmingham and Midland Free Hospital for Sick Children, vice Messiter, resigned.

KRALL, W. P., L.R.C.P.Ed., M.R.C.S.E., has been appointed a Surgeon to the General Hospital, Bristol, vice Coe, resigned.

LANG, J. M., M.R.C.S., L.S.A. (Radcliffe-gardens, South Kensington), has been appointed Assistant-Surgeon to the 1st Middlesex Engineer Volunteers.

LEONARD, J., M.R.C.S.E., has been appointed a Surgeon to the Chelsea, Brompton, and Belgrave Dispensary, vice Ellis, resigned.

MACNAUGHTON, J., M.B., C.M., has been appointed Parochial Medical Officer to the Kilmichael District of the Glassary Parish, Lochgilphead, vice W. Dougan, M.D., resigned.

MOORE, Mr. E. H. (Public Analyst for Brighton), has been appointed Public Analyst for Sussex East, vice Tidy, resigned: £50 per annum and fees.

MURPHY, G. W., M.D., C.M., L.M., has been appointed Medical Officer, Public Vaccinator, &c., for the Ramelton Dispensary District of the Milford Union, Co. Donegal, and Medical Officer to the Fever Hospital, vice Carre, resigned.

MURPHY, S. P., M.R.C.S.E., has been appointed Resident Medical Officer to the London Fever Hospital, vice Mahomed, appointed Medical Tutor and Demonstrator of Pathology at St. Mary's Hospital.

PHILLIPS, E. E., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer of Health for the Rochford Rural Sanitary District: £50 per annum; acreage 107,082; population 20,580.

ROBSON, R. N., M.R.C.S.E., has been appointed a Surgeon to the Durham County Hospital.

WELSH, J., M.D., L.R.C.S.I., has been appointed Medical Attendant to the Royal Irish Constabulary, Ballyshannon, vice O'Donnell, deceased.

WHEATCROFT, S. H., L.R.C.P.Ed., M.R.C.S.E., has been appointed Registrar of Births &c. for the Fincham District of the Downham Union.

WOTHERSPOON, T. A., M.D., L.R.C.S.Ed., has been appointed Medical Officer to the Brampton Union and the Workhouse, vice Thom, resigned.

Births, Marriages, and Deaths.

BIRTHS.

DURIE.—On the 12th inst., at Walmer, Dunfermline, the wife of Andrew Dewar Durie, M.D., of a daughter.

EASTWOOD.—On the 14th inst., at Dinsdale-park, Darlington, the wife of J. W. Eastwood, M.D., M.R.C.P.L., of a son.

ODLING.—On the 3rd inst., at Norham-gardens, Oxford, the wife of Professor Odling, of a daughter.

PICKLES.—On the 9th inst., the wife of H. E. Pickles, L.F.P. & S. Glas., of Blackburn, of a daughter.

SMITH.—On the 6th inst., at Upper Park-street, Clifton, the wife of Samuel Smith, M.R.C.S.E., of a daughter.

MARRIAGES.

CUMMING—FERRIER.—On the 23rd of December last, at St. Saviour's Church, Temuka, Canterbury, New Zealand, Stuart M'Donald Cumming, M.R.C.S.E., late Bombay Civil Service, to Marian, eldest daughter of Mr. Robert Ferrier, of South Clerk-street, Edinburgh.

REID—BASTARD.—On the 16th inst., at West Ham Church, Walter Reid, M.D., Staff Surgeon R.N., to Florence Mary, only daughter of Richard Bastard, Esq., of The Hollies, Stratford, Essex.

VICKERS—STANSFELD.—On the 11th inst., at St. Clement's Church, Leeds, Charles William Vickers, L.R.C.P., M.R.C.S., of Limehouse, E., formerly of Huddersfield, to Annie, only daughter of the late George Stansfeld, Esq., of Leeds.—No Cards.

DEATHS.

BAGNALL.—On the 12th inst., Geo. Bagnall, M.D., of Cheltenham, aged 69.

BRANSON.—On the 15th inst., at South Eaton-place, Sydney J. I. Branson, Student of Medicine at St. George's Hospital, aged 21, from the effects of injuries received at foot-ball.

GIBSON.—On the 7th inst., Dr. Peter C. Gibson, of Picardy-place, Edinburgh, aged 74.

HAMILTON.—On the 7th inst., T. W. Hamilton, M.D., of Mitcham, aged 54.

INGLIS.—On the 13th inst., Andrew Inglis, M.D., of Aberdeen.

IRELAND.—On the 13th inst., R. S. Ireland, M.D., of Stephen's-green West, Dublin, aged 87.

PYLE.—On the 10th inst., at The Cottage, Amesbury, Wilts, Charles Pyle, M.R.C.S., L.S.A., aged 69.

ROBERTS.—On the 4th inst., at Llanlidan Rectory, Denbighshire, David W. Roberts, M.D., late of Llanfairfechan.

[N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*]

BOOKS ETC. RECEIVED.

Professor Stricker: A Manual of Histology.
Dr. Atthill: Diseases of Women.
Hebra: On Diseases of the Skin.
Dr. Seguin: Spinal Paralysis.
" On the Inhibitory Arrest.
" Of the Act of Sneezing.
Mr. Allingham: The Treatment of Fistula.
Dr. Palasciano: Memorie ed Osservazioni di Chirurgia Pratica.
Dr. Byrne: Electro-Cautery in Uterine Surgery.
St. George's Hospital Reports. Vol. VII.
Mr. Crookes: Phenomena of Spiritualism.
Mr. Wallace: On Miracles and Modern Spiritualism.
A Thousand Remarkable Facts.
Mr. Fulman: The Book of the Axe.
A. H. S.: In Memoriam.

Notes, Short Comments, and Answers to Correspondents.

THE WATER-SUPPLY AT OXFORD.

WE have received a letter from the Chairman of the City of Oxford Waterworks in reference to the above subject, asking for the authority upon which we published the statement contained in our impression of the 6th inst. We forwarded this communication to our Sanitary Commissioners, who make the following reply:—

We gladly furnish the information required. During last November THE LANCET Sanitary Commission visited Oxford, and reported on the drainage and general sanitary condition of the town. In the course of their investigations they visited the reservoir of the City Waterworks, and at once perceived that this was the worst feature in the sanitary arrangements of the town. This reservoir is an old gravel pit, dug out by the Great Western Railway Company; some springs having been struck, the pit filled with water, and it was then taken by the Water Company as the main source of their supply. The springs which fill the reservoir set from the river which is closely adjacent, a bed of loose, porous, drift gravel simply intervening. When the reservoir was first opened, the water was good and wholesome, and Dr. G. Child, who examined it in 1866, found, as far as organic impurity was concerned, it was greatly better than that distributed in London by most of the metropolitan Water Companies. In 1873, however, we find from an analysis of Mr. Donkin, which we published in our report, that "in its present state it is at least twice as bad as the average London waters." What, then, has caused this increase in the amount of organic impurity in the water taken from the reservoir? Nothing but the rapid growth and extension of the suburb of New Hinckney. This suburb is situate on the intervening bed of drift gravel before mentioned, and is utterly undrained, and the cesspools and privy-pits with which the place abounds are placed in the direction in which the springs set; and as we know how easily organic impurities and excretory matters find their way through such loose and porous soil, we think ourselves justified in saying that the water supplied by the Water Company is nothing better than "the diluted sewage of Hincksey," and that our language is not too strong when we characterise such a water supply as "abominable, and a disgrace to a civilised community." Whilst we cheerfully take on ourselves the responsibility for the statement complained of, we do not lay claim to originality in pointing out the unsatisfactory nature of the water-supply at Oxford. The source of danger was indicated by Dr. Gilbert Child as far back as 1866; and the late Professor of Geology, Dr. Phillips, was equally emphatic on the subject. In 1870, Dr. Buchanan* visited and reported on the sanitary condition of the town, and most strongly urged on the authorities to adopt some scheme that would prevent the water supplied to the town being contaminated at its source. Even if the recommendations of Dr. Child and Professor Phillips were ignored, the directors ought to have listened to Dr. Buchanan. Again, in the report for 1873, the medical officer of health, Mr. Alfred Winkfield, speaks as follows: "I cannot but feel that it becomes a matter of even greater importance every day, that all chance of the lake (i. e., the reservoir) getting fouled by the sewage of Hincksey should be removed as speedily as possible, and the question arises whether it would not be highly advantageous to have the water from the lake *carefully filtered previously to its distribution throughout the district.*"† In January of the present year the water was still supplied to the town unfiltered! The foregoing facts will satisfy the Waterworks Company that our statements are not uncalled for.

* Report on the Sanitary State of Oxford. Dr. G. Buchanan, 1870.

† The italics are our own.

Tyro.—There is no State examination for such appointments; but most of the Universities have already constituted examining boards for granting certificates guaranteeing competency. The subjects of examination may be learnt on application.

Mr. Smith, (Matlock.)—We do not know of any such procedure.

THE FAMILY OF THE LATE MR. DAVENPORT.

MR. JAMES F. WEST, F.R.C.S., Birmingham, begs to acknowledge the receipt of the following donations towards the Fund now being raised for the widow and eleven children of the late Mr. Davenport. Mr. West begs to thank those gentlemen who have so generously responded to his appeal, and to ask those who have not contributed, and who have the intention of doing so, to forward their contributions at once, as the subscription list will shortly be closed.

F. W. Walsh, Esq., F.R.C.S., Worcester...	£1	1	0	J. Clay, Esq., Birmingham .	£1	1	0
Dr. Harrison, Walsall ...	1	1	0	Dr. Jas. Johnston, „ ...	1	0	0
J. Wardleworth, Esq., Bury	0	10	0	A Friend, per J. Greensill, Esq., Great Witley	0	10	0
W. Moore, Esq., Stourport	1	1	0	Mrs. H. J. Paine, Cardiff ...	2	0	0

C. J. F., (Huddersfield.)—Carl Vogt's "Physiological Letters" hold about the same rank as Liebig's on Chemistry. A good French translation has recently been published.

Dr. Frodsham.—Dr. Stephen Smith, New York, will give our correspondent the information he seeks.

MEDICAL ADVERTISING.

THIS is essentially an advertising age. Bad wines, quack medicines, artificial mineral waters, refuse and rubbish of all kinds, are puffed and sold by means of advertisement as sound, genuine articles. Decency and honesty have hitherto forbidden the practice among qualified practitioners of medicine, and happily there are very few instances where the salutary regulation against advertising is disregarded. There is, at all events, very little direct advertising practised by legalised medical men; but there is, we fear, too much done indirectly. A very gross case has recently been brought under our notice. A parson is in the habit of announcing in the daily newspapers that he will for two stamps tell "invalids wishing advice on private diseases, consumption," &c. &c., where they can be cured. In a printed circular which the "reverend gentleman" sends in return to the "numerous" inquiries, he describes how he became acquainted with the "distinguished physician" to whom he refers. It appears that the son of the advertiser was on friendly terms with the doctor at the University, and that in course of conversation the anxious young man "plainly" declared how his father had been treated, and was at last given up as incurable." "This induced the doctor to visit" the abandoned man, when he found that his "whole system was impregnated with that baneful poison, mercury." Notwithstanding this almost hopeless condition, the doctor agreed to "undertake the cure," but expressed the opinion "that, if EVEN his skill and experience could avail to overcome so many and dangerous symptoms," the course of treatment would necessarily be very protracted. Without going further into the details of this very interesting case, we may state briefly that in the course of four months the patient "became quite cured, and restored to health and strength." In gratitude for these services, this estimable gentleman volunteers to furnish his afflicted fellow-creatures with the name of the "distinguished physician" who wrought this extraordinary cure. The name is John Hayward, M.R.C.S., L.S.A., 14, York-street, Portman-square; and although he is *not* a physician, he is a member of the College of Surgeons, and has sworn to maintain the dignity and welfare of the College. We may observe that the parson sends out a circular marked "strictly confidential" to the patients, containing twenty-five questions, many of which relate to spermatorrhœa, masturbation, loss of sexual power, &c. The replies to these questions are forwarded to the "physician," who then prescribes "the last discovery in electricity," the "patent electric generator."

H. A. C. G.—Apply to the Secretary of Guy's Hospital.

PROFESSIONAL ETIQUETTE.

To the Editor of THE LANCET.

SIR,—The case I am about to narrate having more than a merely personal interest, I must beg you to give this letter insertion in your journal.

Some days since I received a letter from Dr. Falls, of Bournemouth giving me the history of a patient of his, who was about to take up his residence at Ventnor, and requesting me to attend him. This I accordingly did, and on the occasion of my last visit I arranged to see him again in a day or two. This morning the son of the gentleman in question called upon me, stating that he had been to see Dr. George Johnson in London, and that he had informed that gentleman I was in attendance on his father. On this, Dr. Johnson told him that, as I was a physician, he would wish Dr. Whitehead to be called in instead, he being a general practitioner. Dr. Johnson arranged to come down to Ventnor, and fixed his visit for to-day. I need scarcely say that this communication occasioned me the utmost surprise, not unmixed with indignation, and I at once expressed my intention of meeting Dr. Johnson on his arrival at the Ventnor railway station, and of requiring from him an explanation. On my telling Dr. Johnson the nature of the communication made to me, he did not deny the facts, but asked me whether I was not a "consulting physician"; to which I replied I was a physician, and, of course, as such liable to be called in consultation; but that I stood in the same position as Dr. Falls, whom he had made no difficulty in meeting, and who had himself confided the case to me. I told him that his conduct in stipulating for my dismissal and the calling in of Dr. Whitehead was most extraordinary; that he passed upon me in so doing not only an affront, but an injury, and that I should take the opinion of my professional brethren on his behaviour. I also stated that, after what had occurred, nothing would induce me to enter the house of the gentleman in question, unless an ample and complete explanation were offered me. I had not the smallest reason to believe that my attendance had been otherwise than satisfactory; the next visit, with the approval of the patient, had been arranged for, and his son gave me to understand that, not knowing what constituted professional etiquette, they could only acquiesce in Dr. Johnson's wishes. I may mention that I found Dr. Whitehead at the station in readiness to meet Dr. Johnson.

Such are briefly the facts of this case, and I now demand of Dr. George Johnson an explanation through your columns of his conduct.

I remain your obedient servant,

ARTHUR HILL HASSALL, M.D.

Ventnor, Isle of Wight, March 17th, 1875.

OUR CLINICAL THERMOMETERS.

NOT the least serious bearing of the recent Scarborough case of hyperpyrexia is the disparagement of our present race of clinical thermometers which it involves. The range of their graduation is from 90° or 95° to 110°. The question is, What is to be done? Probably most of us will be content to use up our present instruments on the chance of their being capable of registering any temperature that we are likely to meet with before the too common accident of fracture happens to them. But in regard to fresh purchases, we shall expect the instrument-makers to supply us with instruments with a larger scale. And they will permit us again to say that accurate thermometry is becoming so important in daily medical practice that only such instruments as are carefully tested should be sold for clinical purposes.

DEATH BY STARVATION IN PRISON.

THE Jersey papers comment with just severity on the death of a poor girl, aged fourteen, who had been unjustly sentenced for a petty larceny, really committed by others, to a month's imprisonment, of which two alternate weeks were to be spent in solitary confinement, including a regimen of water and bread. To her and another girl in the same condemnation only half a pint of water was allowed in twenty-four hours. Before the end of the second week of this fare she became ill with congestion of the lungs, was removed to hospital, and died in less than five hours. The description of the utter neglect of the poor girl, and especially of the disregard of her cries for water, intensified doubtless by the fever of congestion of the lungs, is one of the most heartrending and discreditable histories which we have ever read. Death is only too intelligible in a girl of fourteen, in a fireless cell, when the severity of the late few weeks is remembered. The medical man attributes the death to debility. Doubtless rightly. But what produced the debility? What but cold and want of water and of food? Such treatment even of crime has no foundation in reason, and ought to have no sanction from the medical officer of the prison. It is a form of capital punishment applied to a petty offence ascribed to an almost irresponsible and, as it turned out in this case, an innocent child.

Sir Charles Trevelyan's letter shall be published in our next impression.

HIGH TEMPERATURE.

To the Editor of THE LANCET.

SIR,—The account of a case of remarkable elevation of temperature given by Mr. J. W. Teale at the last meeting of the Clinical Society did not excite in my mind that amount of wonderment which it appears to have done in that of others. There can be no doubt that the case is one of the deepest interest, and from its rarity would at first sight be looked upon as little short of phenomenal. Cases like this one, if such have ever existed, have not been placed upon record, and it would be a pity if for this reason the great aid which the thermometry of disease affords to the physician should be ignored or thought lightly of. In Mr. Teale's case it appears that all disease had subsided, and that the fractured ribs had united, leaving no lesion of importance to account for the exceptional temperature. It is quite evident that in reference to the cord and its membranes no disease ever existed. We have no account of hyperæsthesia or anæsthesia, or of any absence of motility. Therefore we can at once set aside the varying conditions of temperature found in organic lesions, and also the absurd and impractical deductions drawn from mere experimental data as to the heat-giving centre either of the brain or the spinal cord. We cannot, however, forget the fact that the sympathetic and vaso-motor centres are (so to speak) the stokers of the furnace of the human body; neither must we pass by another fact, that of the co-ordinate relation between these centres and the emotions. I am surely right in asserting that this case, however exceptional it may be, does not for one moment set aside the valuable manifestations of the body-temperature which are compatible with organic life.

In Mr. Teale's account we find that when the thermometric readings were highest, the hands, feet, and forehead were icy cold, and this signifies that the temperature of the axilla was an exceptional one to that of the rest of the body. And again we find in another part of the report that the thigh and rectum gave a higher comparative temperature at one time than the axilla did. It is much to be regretted that Mr. Teale did not take comparative temperature in both axillæ, thigh, and rectum at the same moment of time. My reason for saying this will be obvious enough when I state that so-called hysterical patients appear in some way to possess a power (however unconsciously it may be exercised) of generating heat at the spot to which at the time their attention is directed. The most ignorant of our patients knows that the thermometer is placed on the body in order that the degree of body heat may be ascertained. An educated and intelligent patient (as Mr. Teale's presumably was) would know this and more. She would know, too, that the degree of heat was an index of her state of health, and thus, her attention being strongly drawn to the thermometer and the part in which it was placed, the degree of heat in that part would be sensibly increased. To exemplify this more fully, one is justified in referring to the ecstatic of Bois d'Haine. In Louise Lateau we have not an increase of temperature, but vaso-dilatation, the result of self-directed if unconscious mental tension. The cases seem to me to be somewhat alike. Without venturing to trespass upon vague theories as to the reason why or wherefore Mr. Teale's patient should have a temperature in the axilla of 122°, whilst the hand, feet, and head were icy cold, I must say that, in my opinion, the case is obviously one where the relation existing between mind and its physical congeners, the vaso-motor centres, explains to us rationally what would otherwise be a mysterious phenomenon.

Yours most truly,
THOMAS STRETCH DOWSE.

Central London Sick Asylum, Feb. 8th, 1875.

THE CASE OF MR. PEACOCK.

IN our article on the recent prosecution of Mr. Edwin Peacock, we inadvertently omitted to mention the name of Mr. M. C. Buszard, who was engaged in the case as counsel for the crown.

CERTIFICATES OF DEATH.

To the Editor of THE LANCET.

SIR,—"A Registrar" very properly calls the attention of the medical profession to the necessity of signing their names &c. legibly. May I be permitted to inform the profession that the space in the register of death in which the cause of death, name, &c., and qualifications of the medical attendant signing the certificate are to be written, is extremely limited, being about 1¼ in. by 1¼ in. It is, therefore, impossible in many instances to insert all the titles, which are frequently several, as M.D., M.R.C.S., L.S.A., &c. I think one title would be quite sufficient. Then again the cause of death in many cases is so spun out that it would take all the space allotted in the register book for that alone. I think the profession would oblige the registrars by making the cause of death as concise as possible, and by inserting their chief qualification only.

Your obedient servant,
March, 1875. W. FAULKNER, M.R.C.S. and Registrar.

THE PHYLLOXERA.

THE Committee appointed to award the prize of £12,000 to the discoverer of a specific for the destruction of this insect have just presented their report. No communication, out of six hundred, has deserved the prize, although each was based upon experiments. But the requirements of the Government offering the reward had not been fulfilled—viz., the discovery of an efficacious and economical means, applicable to all kinds of land, to arrest the ravages of the insect. The competition remains, therefore, open; and the candidates are apprised that it is not sufficient to point out a specific, but that proof must be afforded, by repeated, prolonged, and authenticated experiments, that the specific is capable of economically removing the phylloxera from the vine which has been attacked, to preserve the sound plants, and eventually to cause the diseased vines to revive and bear as usual.

ARMY MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—Mr. Gathorne Hardy, when asked by Dr. Lyon Playfair whether it was true that there were only 11 candidates for the last competitive examination, replied in the affirmative, but added that there were no vacancies! How is this? The department has lost 26 more men than it gained during the past year, and the army estimates indicate no reduction in numbers. I append a list, showing in detail the gains and losses of the medical service in proof of the correctness of my statement, by which you will perceive that the latter amount to 58, and the former to 32, the balance being 26. The list does not include the African service, but only the active list—i. e., officers on full pay. Deaths &c. on the half-pay list have not been noticed. The War Minister had to acknowledge that the best man for the army medical service obtained only 64 marks more than the worst man of the Indian medical service, and yet they were all *well* qualified! Be it remembered that the average of the 8 candidates' marks is about *one-half* the total attainable number!

Again, Mr. Hardy pointed out that in 1873 the British medical service obtained the best man; but he omitted to point out at the same time that this has never happened before nor since. That it happened then was probably due to the fact of the belief being entertained that Lord Cardwell was about to bring out a good Warrant for the department.

Yours obediently,
March 16th, 1875. AN ARMY SURGEON.

To the Editor of THE LANCET.

SIR,—If ever there was a time when you required to have the courage of your opinions it is the present. The object of maintaining an army at all is that it should be effective for war, and the object is, or should be, the same for the army medical and any other service, and they should be organised accordingly. We require a Royal Army Medical Corps, with clearly defined functions and powers, and it is the opinion of nearly all thoughtful and experienced men that the objections which are now raised against this proposition will utterly disappear in the presence of those immediate necessities which we shall have to encounter in the very first war of any size in which we may happen to be engaged. The experience of the regimental system in a chronic war and siege like that of the Crimea, or in a small undertaking like that of Abyssinia, proves nothing in reference to modern warfare on a large scale. The social advantages of the regimental system in time of peace may one of these days turn out to have been purchased at the cost of a disastrous break-down of the medical service, for which the nation will call that service to an account. No one denies that the army doctors have been badly treated; but it is surely competent to one to hold that opinion and be convinced of the erroneous principle which underlies our army medical organisation. The only obstacle to the complete abrogation of the regimental system is in the case of India; but this could be overcome by consideration and by some practical modification which need not vitiate the principle. Wherever the general system is followed out, it only requires a practical, conciliatory, and independent local administrator to make it work very well in the end. As a practical contribution towards solving one of the difficulties of relative rank, I would suggest that a scale should be hereafter drawn up and published by authority, in which the pecuniary value of all allowances should be set forth in columns opposite the various ranks, and alongside the advantages—such as quarters, forage, servants, &c.—represented, so that any and every medical officer would know the actual sums to which he was entitled whilst deprived of any or all of them.

Yours obediently,
March, 1875. A. M. D.

QUADRUPLETS.

THE *Lyon Médical* states that the Countess Schlippenbach, in Croatia, was lately delivered of four children, three girls and one boy. A woman of the name of Latouche, of Saint Roch, near Quebec, is also mentioned as having given birth to four fine boys. The paper does not state whether these children lived.

Room for All has no other odds to struggle against than other young practitioners. We advise him to have patience, and not to issue circulars. The latter course would be not only a breach of etiquette, but also of taste, and would be permanently injurious to him. The custom of first calling varies in different places. The common one is for the seniors to call on the junior.

THE HEREDITY OF BONE-SETTING TALENT IN THE FEMALE LINE.

THE following advertisement is taken from the *Stratford-on-Avon Herald* of Feb. 26th:—

"TO PERSONS REQUIRING ASSISTANCE IN CASES OF BROKEN BONES AND DISLOCATIONS.—Mrs. Picken, formerly Elizabeth Matthews, daughter of Mr. Joseph Matthews, of Quinton in Gloucestershire, and sister to Mr. Edward Matthews, bone-setter, &c., begs to state that her brother having discontinued his attendance at Stratford-on-Avon, she intends carrying on the profession for which the family has been famous for so many years, and will attend patients at the Plymouth Arms Inn, Wood-street, Stratford-on-Avon, from two till five o'clock P.M. on Fridays. Address—Shottery, near Stratford-on-Avon."

Lithotomist, (Portsmouth.)—Dr. Corradi, Professor of Clinical Surgery in Florence. His treatise on Maladies of the Urinary Organs is just out, and well deserves a translation into English. It gives a clear account of the physical and chemical characteristics of the urine, the best modes of analyzing it, its pathological alterations, and perhaps the most complete description yet attempted of the urinary calculi. "Trattato sulle Malattie degli Organi Orinari" is its full title.

THE letter of *F.R.C.S.* arrived too late for insertion this week.

A Surgeon.—We are not aware of one.

THE DAVEY DEFENCE FUND.

FURTHER contributions received on behalf of the above Fund:—

Dr. A. Jackson, Southsea, per J. Smart, Esq. ...	£5	0	0
Dr. Eade, Norwich	1	1	0
Dr. Allen Duke, Dover ...	1	0	0
J. W. Fry, Esq., Kent ...	1	1	0
Dr. Bostock, Chichester ...	0	10	0
Messrs. Bostock, ,, ...	2	0	0
Dr. T. E. Goss, Bath	1	1	0
Dr. E. Flint, Canterbury ...	0	10	6
Dr. D. Goyder, Bradford ...	0	10	6
Dr. S. Swyer...	1	1	0
Dr. R. Inman, Preston ...	1	1	0
C. W. Izod, Esq., Esher ...	1	1	0
J. P. Garman, Esq.	1	1	0
W. Coleman, Esq., Brighton	0	10	6
Dr. J. Deane	0	10	6
Dr. J. Jones, Ross	0	10	6
R. Harrison, Esq., Westmoreland	0	5	0
Dr. J. Harper, Barnstaple .	1	1	0
Dr. J. N. Hind, Southwell .	0	10	0
J. T. Hillier, Esq., Ramsgate	0	10	0
Dr. W. B. Hunter, Matlock Bridge	0	10	6
M. C. Halton, Esq., Barnsley	1	1	0
O. Johnson, Esq., Newark .	1	1	0
Dr. J. H. Keeling, Sheffield	2	2	0

COMMUNICATIONS not noticed in the current number will receive attention in our issue of the ensuing week.

COMMUNICATIONS, LETTERS, &c., have been received from—Prof. Latham, Cambridge; Dr. George Johnson, London; Dr. Headlam Greenhow, London; Dr. Hermann Weber, London; Sir Charles Trevelyan, London; Prof. Lister, Edinburgh; Mr. Pollock, London; Mr. Holthouse, London; Mr. Teevan, London; Dr. Hassall, Ventnor; Mr. John Galpin, Oxford; Dr. Sandford, London; Mr. Smith, Matlock; Mr. Orton, Stockport; Mr. Folker, Hanley; Mr. S. J. Knott, London; Dr. Greenfield, London; Dr. Ross, Monaghan; Mr. Robinson, Dublin; Mr. Fergusson, Peebles; Mr. Marshall, London; Mr. Foster, London; Mr. Monro, Newtown; Dr. Vinen, London; Mr. Draper, Bristol; Mr. Hill, London; Mr. Reilly, London; Mr. West; Dr. Frodsham, London; Mr. Clarke, Liverpool; Mr. Leonard, London; Mr. Lang, London; Dr. Carmichael, Edinburgh; Dr. Crompton, Birmingham; M. P. de Villiere; Mr. Webber, London; Mr. Poole, London; Mr. Ager, London; Mr. Fleming, Glasgow; Mr. Jay, Adelaide Hospital; Dr. Semple, London; Mr. Brown, Northallerton; Mr. Wilson, Chatteris; Mr. De Tatham, Bombay; Mr. Walker, Spilsby; Dr. Luce; Mr. Sim, Nottingham; Mr. Harris, Liverpool; Mr. Woodcock, Bradford; Mr. Blake, Dublin; Mr. Atkinson, Wylam; Mr. Skrimshire, Holt; Mr. Simmons, Wotton-under-Edge; Messrs. Dodd and Co., Birmingham; Mr. Bryden, Port Rhyastes, N.B.; Dr. Shearman, Rotherham; Mr. Clampett, Bootle; Mr. Platt, Oldham; Messrs. Boyle and Co., London; Mr. Morris, Swansea; Mr. Croskery, Lewes; Mr. Dearden, Church; Mr. P. G. Brown, London; Mr. Buckle, Surbiton; Mr. Gray, London; Dr. Bayes, London; Dr. Meadows, London; Mr. Bramwell, Newcastle; Mr. Evans, Dyffryn Cerí; Dr. Campbell, Chigwell Row; Dr. Gaskell, St. Helens; Mr. Larmuth, Manchester; Dr. Lister, Newton-le-Willows; Mr. Wheeler, Manchester; Mr. Maclehose, Glasgow; Mr. Hobson, Berkhampstead; Messrs. Burgess and Willows, London; Mr. Wilson, London; Mr. Deacon, Knighton; Mr. Hay, Wolverhampton; Mr. Forster, Cullencoats; Miss West, Gravesend; Dr. Mackenzie, Normanton; Dr. Woodward, King's Lynn; Mr. Lediard, London; Inquirer, Adelaide; X. Y. Z.; Tyro; Ignoramus; Auscultator; &c. &c.

LETTERS, each *with enclosure*, are also acknowledged from—Mr. Costelloe, Chesterton; Mr. Allt; Mr. Howse, London; Mr. Morgan, Lichfield; Mr. Lee, Heckmondwike; Dr. Highmore, Sherborne; Mr. Jackson, Arundel; Mr. Brenner, Dublin; Dr. Davies, Ebbw Vale; Mr. Jackman, London; Dr. Solly; Dr. M'Gregor, Alston; Mr. Prestwich, Oldham; Mr. Thomas, Merthyr Tydfil; Mr. Harris, Liverpool; Mr. Buckland, Kensington; Messrs. Black and Co., Bath; Mrs. Whiston, Leamington; Mr. Bamber, Blackpool; Mr. Padwick, Twickenham; Dr. Eastwood, Darlington; Mr. Swann, Bournemouth; Mr. Hamilton, Manchester; Mr. Truman, Rippingale; Mr. Richardson, Balliemulloch; Mr. Spragge, Nottingham; Mr. Stott; Dr. Dixie, Hendon; Dr. Sheene, Crouch End; Mr. Phelps, Bristol; Mr. Wall, Wigan; Messrs. Porteous and Co., Glasgow; Mr. Craddock, Ventnor; Mr. Currie, Thetford; Mr. Campbell, Staunton; Mr. Crowther, Congleton; Mr. Spencer, Bradford; Mr. Stoney, Millon; Messrs. Kelly and Piet, Baltimore; Mr. Armistead, London; Dr. Angus, Tonbridge; Mr. Brendon, Hackney; Mr. Fordham, Mile-end; Mr. Watson, London; Mr. Beardsley, Grange-over-Sands; Mr. Heath, Calne; Mr. Tothill, Topsham; Mr. Andrews, Sheffield; Mr. Dickson, Newton Stewart; Mr. Hills, Rotherham; Mr. Douglas, Leicester; Mr. Smith, Leighton Buzzard; Mr. Lawton, Liverpool; Mr. Lawes, London; Mr. Kelly, Sontergate; Mr. Leggatt, Eastry; Mr. Hay, Laymore; M.B., Bristol; M.R.C.S., Great Hadham; P., Great Grimsby; Surgeon, Rugeley; A. D., Birmingham; E. R., Market Bosworth.

Newcastle Daily Chronicle, Metropolitan, Western Morning News, Welshman, Manchester Guardian, Liverpool Post, Huddersfield Daily Chronicle, Staffordshire Sentinel, Sussex Daily News, Scarborough Gazette, Chorley Standard, Macclesfield Courier, East London Observer, Surrey Advertiser, Isle of Man Times, and *Stratford-on-Avon Herald* have been received.

METEOROLOGICAL READINGS

(Taken by Steward's Instruments).

THE LANCET OFFICE, MARCH 19TH, 1875.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Wet Bulb.	Dry Bulb	Solar Radia. in Vacuo	Max. Temp. Shade	Min. Temp.	Rain-fall.	Remarks at 9 A.M.
Mar. 12	29·99	E.	35	37	...	40	26	0·05	Raining
,, 13	29·95	E.	37	39	...	43	30	...	Overcast
,, 14	29·08	E.	39	41	...	47	38	...	Overcast
,, 15	30·17	N.E.	33	34	...	50	32	...	Overcast
,, 16	30·27	N.W.	36	38	...	43	33	...	Overcast
,, 17	30·25	N.E.	36	38	...	44	37	...	Overcast
,, 18	30·59	E.	...	34	...	...	33	...	Fine

Medical Diary for the ensuing Week.

Monday, March 22.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. W. K. Parker, "On the Structure and Development of the Skull."
MEDICAL SOCIETY OF LONDON.—8 P.M. Clinical Evening.—Mr. Gant, "On Epithelioma of the Tongue," with Laryngoscopic Illustrations.—Dr. Theodore Williams, "On a Case of Arrested Phthisis in which complete Contraction of a Tinkling Cavity took place."—Dr. Broadbent: "Illustrations of different forms of Uræmic Poisoning."

Tuesday, March 23.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8½ P.M. Mr. Walter Rivington, "On a Case of Pulsating Tumour of the Left Orbit cured by Ligature of Left Common Carotid Artery, with a *résumé* of the recorded Cases of Intra-orbital Aneurism."

Wednesday, March 24.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at 1½ P.M.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.
LONDON HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. W. K. Parker, "On the Structure and Development of the Skull."

Thursday, March 25.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

Friday, March 26.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, March 27.

ROYAL FREE HOSPITAL.—Operations, 9 A.M. and 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

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